10TH EXPOSITION PREVIEW ISSUE . . . . . COMMERCIAL REFRIGERATION

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The Newspaper of the Industry
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Inside Dope

By GEORGE F. TAUBENECK

Learn to live and laugh — thus delay your epitaph

Stories of the Week
'Old Rocking Chair's Got Me'
What Won't They Think Up Next?
Giordano Honored
Home Freezer to the Fore
Highbrow Refrigeration

Stories of the Week

Two years ago a friend of ours had trouble when he tried to squeeze his "dream car" into his homestead. He had to widen and lengthen the garage.

This year he had to raise its height (the garage, that is) to accommodate the fins.

"Sit down, Buster," commanded Mrs. Wife. "I have a lot of things I want to talk to you about."

"Good!" approved Hubbie. "This will be a change. In the past you've wanted to talk about a lot of things you don't have."

The man that a woman can't make a fool of doesn't live. He merely exists.

Cost of Living really hasn't changed much. It's still a little more than you can afford.

'Old Rocking Chair's Got Me'

Frigidaire introduced colorful 1958 models to "the Press" in Toronto, Canada last week—thus emphasizing and dramatizing its round-the-world slogan: "Frigidaire is Everywhere."

Having taken care of that preamble, let's get on to a humiliating anecdote. "Dope" was introduced to cute-trick Anne Anderson, home equipment editor of *Better Homes and Gardens*. Conversationally, she revealed that she was a University of Illinois graduate.

"How about that!" your correspondent bushy-tailed. "I, too—class of 1930. And over there is Phil Redeker, '31."

Giggled Mrs. Anderson (Class of 1952): "you were Seniors before I was born."

Mercifully, General Manager Cannon, Frigidaire of Canada, supplied crutches and a cane, and we hobbled out into the night.

What Won't They Think Up Next?

"Turn on the windows—it's getting dark." This is a phrase your wife may employ soon in

(Concluded on Page 8, Col. 1)

BIGGEST SHOW OPENS NOV. 18

'Third Greatest' Commercial Refrigerator Sales Year Seen; 3rd Quarter Improves

DETROIT—Sales in the commercial refrigerator field, while continuing to lag behind the 1956 pace, will probably wind up with the 1957 year as the third greatest in the history of the industry, based on figures presently available.

For the first three quarters of 1957, manufacturers' shipments of commercial refrigerators were running something over 8% behind shipments for the comparable period in 1956. This was some improvement over sales at the end of the first quarter, which were running more than 9% behind the 1956 figure.

It must be kept in mind that the industry's sales in 1956 were only slightly off from the record-breaking year 1955, which had shown an increase of more than 20% over 1954.

Pin-pointed figures on the commercial refrigeration industry are difficult to accumulate, for the reason that there are so many divisions of the industry, and such figures as are collected in any organized manner are collected by a variety of associations, most of whom to do not make the figures public.

However, the editors of the NEWS have checked reliable sources and have come up with the following predictions of sales totals for various categories of commercial refrigeration equipment for 1957.

Estimated 1957 Commercial Sales

Display cases, reach-in refrigerators, walk-in refrigerators, both regular and low temp. types	142,000
Ice Cream Cabinets	72,000
Water Coolers	126,000
Milk Coolers (Bulk and Can)	38,000
Beverage Coolers	36,000
Vending Machines (Refrigerated)	125,000
Ice Makers	27,000

In the past 60 days, according to industry authorities, there has been a very perceptible upward trend for the industry as a whole in terms of orders, and some manufacturers are reporting sizeable backlogs for the first time this year.

This suggests that the very

(Concluded on Page 26, Col. 1)

Compressor Sales Only 6% Under '56

WASHINGTON, D. C.—Manufacturers' shipments of compressor bodies during the first seven months of 1958 were about 6% below comparable shipments during the same period of 1956, Geo. S. Jones, Jr., managing director of Air-Conditioning & Refrigeration Institute reports.

While the over-all total of shipments was below last year, sharp increases continued to be apparent in 1 and 2-hp. categories as well as compressors designed for automotive air conditioning.

The figures are based on reports to ARI from companies whose output of compressor bodies is estimated to represent more than 95% of total U. S. production. They do not include shipments of bodies produced for use in household refrigerators.

Shipments of 2-hp. bodies jumped from 55,344 in the seven-month period of 1956 to 179,051 in the comparable period of 1957. The figures for 1-hp. units rose from 515,326 last year to 760,833 in the same seven months of 1957. The gain in shipments of automotive-type bodies was from 194,056 the first seven months of 1956 to 349,580 in 1957.

Most of the losses were in fractional-horsepower bodies, the sharpest being in ½-hp.

(Concluded on Page 37, Col. 1)

Automated Selling Pushes Into Commercial Refrigeration

ANN LANDERS, whose advice-to-the-confused column appears in 126 newspapers, related recently that one correspondent asked her: "What happens to the extra penny when I put a dime into a machine and out came three 3-cent stamps?" Miss Landers (real name: Mrs. Jules Lederer) believes that this plaintive query heralds the ARRIVAL of the Automatic Selling Age.

She could be right. Already you can buy cigarettes, beverages, candy, nylon stockings, and insurance policies from vending machines located everywhere that people congregate. Soon, it is predicted, any type of frozen foods will be vended 24 hours a day from the formerly discredited

(Concluded on page 20)

York Buys Lehigh Car Compressor, Mfg. Facilities

EASTON, Pa.—Lehigh, Inc. here has sold its newest automotive air conditioning compressor and related manufacturing facilities to the York Div. of Borg-Warner Corp., it was announced by F. E. Shumann, chairman of the board.

With the sale of its automotive compressor business, Lehigh intends to concentrate on hermetic and open-type condensing units and other refrigeration products.

The company will continue to supply parts and service for all previously manufactured models of Lehigh automotive compressors with the exception of the 1958 model A-210.

"Introduced last June, the Lehigh model A-210 compressor

(Concluded on Back Page, Col. 1)

Worthington Policy

Mueller To Handle All Home Heating, Cooling Unit Sales

HARRISON, N. J. — All Worthington Corp.'s home air conditioning and heating equipment sales will be handled by the corporation's Mueller Climatral Div. under a new policy announced by Walther H. Feldmann, Worthington president.

Sales to the commercial and industrial markets will continue to be handled by the Air Conditioning & Refrigeration Div.

"By bringing to bear the most expert talent in the corporation in each of these distinct and different markets, we expect to achieve a better overall result and to obtain a larger share of both the residential and the commercial and industrial markets," Feldmann said.

Previously the two divisions operated separate distribution systems in residential market.

Elston J. Tribble, group vice president of Worthington, will administer the over-all operations of both divisions and coordinate marketing activities.

258 To Spread Products at Chicago Show

Expect 15,000 To See Industry Exposition

WASHINGTON, D. C.—The 10th Exposition of the Air Conditioning and Refrigeration Industry, coming to Chicago on Nov. 18, will be the biggest in the history of the Show.

At latest count, 258 exhibitors will spread their products over 94,000 sq. ft. of space for examination by an expected 15,000 industry visitors.

Exposition hours are scheduled as follows:
Monday, 2 to 10 p.m.
Tuesday, 10 a.m. to 6 p.m.
Wednesday, 10 a.m. to 6 p.m.
Thursday, 10 a.m. to 4 p.m.

The Exposition, sponsored by the Air-Conditioning & Refrigeration Institute, will be staged in the International Amphitheatre. Opening at 2 p.m. Monday, Nov. 18, it will run for four days, closing its doors for the last time at 4 p.m., Thursday, Nov. 21. In between, visitors will have a total of 30 hours to visit displays, examine prod-

(Concluded on Page 37, Col. 2)

Abuses In Frozen Food Handling Eyed

WASHINGTON, D. C.—Two actions designed to do something about abuses in frozen food handling from packer to consumer were announced recently.

In December, the American Home Economics Association will report to its members a number of specific recommendations its frozen food subcommittee has made to distributors, retailers, and consumers. (See story page 4).

Within a few weeks, the National Association of Food & Drug Officials of the United

(Concluded on Page 4, Col. 5)

TURN THIS PAGE . . .

To find out more about the Exposition and read a Hallowe'en treat of stories about commercial refrigeration. There are four pages (17, 18, 19, 21) of show briefs where exhibitors tell what commercial equipment they will display, a complete exhibitor list and show floor plan (p. 12), two special stories you won't want to miss on the use of color in food markets (p. 16, 28), and our regular section devoted to commercial refrigeration starting on page 24.

More special issues are coming.

Air Conditioning—Nov. 4 Parts and Supplies—Nov. 11
Big Show Issue—Nov. 18

To start your show reading now . . .

. . . OPEN HERE

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And RED BRASS PIPE

READING COPPER TUBING truly trouble-free for Refrigeration & Air Conditioning Equipment

Made by Copper Tube SPECIALISTS

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EMPIRE STATE BUILDING NEW YORK 1, N. Y.
WORKS: READING, PA.

RACCA Announces Program For Meeting Nov. 17-19

CLEVELAND — Complete program for the 12th annual convention of the Refrigeration and Air Conditioning Contractors Association was announced recently by W. Ray Kromer, executive vice president.

The convention will be held in the Gold Coast room of the Drake hotel in Chicago on Nov. 17-19. Program follows:

SUNDAY, Nov. 17

9 a.m.—Board of directors meets in room M-18.

10 a.m.—Registration opens, French room foyer.

5:30 p.m.—Reception and cocktail party, French room, RACCA of Chicago, host.

MONDAY, NOV. 18

8 a.m.—Registration opens, French room foyer.

9 a.m.—Opening session, west end of Gold Coast room.

Presiding: Dudley M. Cawthon, immediate past president.

9:05 a.m.—President's message and formal opening of convention. William D. Moody, president.

9:20 a.m.—Review of convention program and announcements, W. L. Long, general convention chairman and president of Chicago RACCA.

9:30 a.m.—Review of trade relations participation program, Walter McCarthy, chairman of convention trade relations committee.

9:50 a.m.—Money Making Forum. Moderator: W. L. Long.

Compensation of Salesmen, Albert G. Weil.

Development of sales engineers, Paul Unger.

Secret of good management, Guido F. Restagno.

Selling for profit, George T. Howe.

Fallacies of price cutting, Louis H. Streb.

12:30 p.m.—Annual business luncheon, east end of Gold Coast room.

Presiding: William D. Moody, president.

Report of credentials committee, Joseph F. Marchase, chairman.

Report of nominating committee, George T. Howe, chairman.

Election of president and directors.

1:25 p.m.—Review of RACCA activities, William D. Moody, president.

1:45 p.m.—Guest speakers:

Peter T. Schoemann, general president, United Association.

John J. McCartin, assistant general president, UA.

Joseph F. Monahan, general organizer and head of refrigeration and air conditioning division.

2:30 p.m.—Adjournment.

3 p.m.—1958 board of directors meeting, room M-18.

TUESDAY, NOV. 19

8:30 a.m. — Registration open in French room foyer.

9:30 a.m.—General session, west end of Gold Coast room.

Presiding: W. L. Long.

9:35 a.m. — Welfare and Progress Forum. Moderator: Harvey O. Miller.

Profit sharing plan, Warren W. Farr.

Maintenance contracts, Walter McCarty.

Value of local joint committee activity, Charles Edmonds.

Relations of management and labor in collective bargaining, Charles L. Walling.

Bid shopping legislation, Harvey W. Hottel.

Trade relations and annual programs, A. G. Dietl.

11:30 a.m.—Report of resolutions committee, Ron B. Garlock, chairman.

12:05 p.m.—Adjournment.

12:30 p.m.—Awards luncheon, east end of Gold Coast room.

Presiding: W. L. Long.

1:30 p.m.—Presentation of awards, Armand Cowan, director.

1:45 p.m.—Why a Trade Association?, Arthur M. Palen, past president and president, Twin Cities chapter.

2 p.m.—Guest speaker. "A Fate Worse than Debt," Chuck Hanna.

2:40 p.m.—Presentation of gavel to incoming president.

Introduction of new directors, officers, and committee chairmen.

3 p.m.—Message from incoming president.

3:30 p.m.— Close of convention.

A. H. ROLLINS

R. H. BETTAG

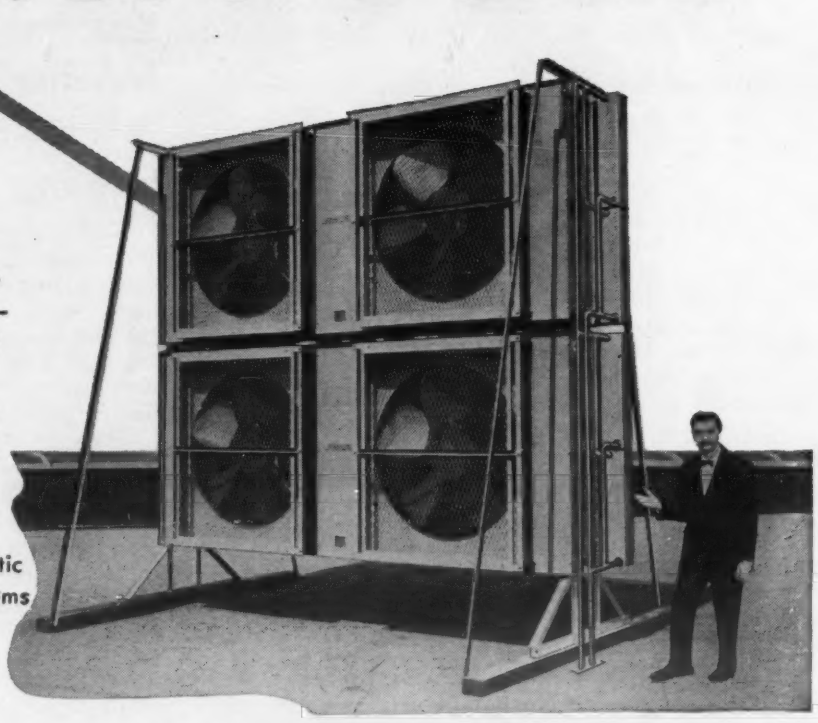
Virginia Smelting Names Bettag, Rollins

WEST NORFOLK, Va.—The Refrigeration Dept. of Virginia Smelting Co. announces the appointment of two field representatives, Roman H. Bettag and Arthur H. Rollins.

Bettag, with headquarters in St. Louis, will travel Missouri, Arkansas, Nebraska, Kansas, and portions of Illinois and Iowa. Rollins will headquarter in Dallas, and will cover north Texas, Oklahoma, and portions of Louisiana and Mississippi.

Bettag comes to Virginia from Kerotest Mfg. Co. Rollins was formerly with Carrier Corp.

KRAMER UNICON GETS BIGGER and BIGGER



There is only one answer to large capacity condenser problems — the KRAMER UNICON. Every day more engineers plan larger tonnage installations — 50, 100 and even — 800 tons. And every day UNICONS are shipped to all parts of the world for giant-sized installations. No other air-cooled condenser can match the long, successful record of UNICON, backed by thousands of applications since 1937 — in the widest range of tonnages and climatic conditions. Your condensing problems can be best answered by use of the best — the KRAMER UNICON.

Space-saver UNICON, *as illustrated,* serves a 60-Ton air conditioning system, yet takes but 70 sq. ft. of roof space.

UNICON is a remote-type air-cooled condenser that requires no water. KRAMER UNICON can be used with any size compressor, REGARDLESS of horsepower. Any size refrigeration or air conditioning system can be air-cooled with UNICON, REGARDLESS of tonnage. UNICON requires less horsepower, less piping, is easier to install and costs less. KRAMER UNICON performs best — even in semi-tropical climates.

WRITE FOR BULLETIN U-210D

KRAMER TRENTON CO. • Trenton 5, N.J.

For more information about products advertised on this page use Information Center, page 22.

THE CUSTOMER SERVICE THAT WAS 375 MILES LONG

Not too long ago, the manufacturer of a new bulk milk cooler was experimenting with design changes aimed at lowering his unit price.

We at Bendix-Westinghouse heard about the problem and offered the services of one of our field men who knew refrigerating engineering and who had a lot of experience in the dairy field. Our offer was promptly accepted, and—because our manufacturer friend had a big order in the balance—a "rush" tag was placed on the assignment.

At the time, our field man was 375 miles away from the manufacturer's city. But, by driving all night, he was there the next morning. By the end of the day he had made some design suggestions that resulted in a better product at lower cost. Happy ending: The manufacturer got his milk cooler order—and Bendix-Westinghouse got a nice compressor order, too.

Such willingness—and ability—is, we're proud to say, a trait that extends from top to bottom in our organization. We've got the darndest people you ever saw when it comes to practicing the philosophy that "what's good for the customer (or prospect) is good for us, too".

If that kind of spirit—plus compressor quality that takes a back seat to no others—appeals to you, we have a suggestion to make. Get our story.

Bendix-Westinghouse

EVANSVILLE, IND.

A Division of Bendix-Westinghouse Automotive Air Brake Company, Elyria, Ohio—Export Sales: Bendix International, 205 E. 42nd St., New York 17, N. Y.

For more information about products advertised on this page use Information Center, page 22.

To Be Published In December

Home Economics Group Spells Out Recommendations How To Correct Handling Abuses of Frozen Foods at Every Level

WASHINGTON, D. C.—Specific recommendations for correcting the abuses in handling of frozen foods at the distributor, retailer, and consumer levels have been spelled out by the consumer interests committee of the American Home Economics Association.

The association has already submitted these recommendations to more than 350 volume handlers of frozen foods, including associations of processors, wholesalers, retail grocers, carriers, and packers, and to government groups.

Many favorable replies were received by the committee, according to Mrs. Mary Swickert, chairman of the frozen foods subcommittee of the consumer interests committee.

The recommendations are to be published in the December issue of the association's *Journal of Home Economics*, which is read by some 24,000 home economists. The home economists are urged by the journal to make use of these recommendations through newspapers, magazines, schools, radio, television, group meetings, and institutions.

"The committee suggests that consumers become aware that changes are being recommended to industrial handlers as well as to consumers," the journal article says.

It adds, "the consumer interests committee feels that everyone engaged in the handling of frozen foods—including the consumer—needs to joint together in an action program."

Here are the specific recommendations as spelled out in the journal:

Distributors should: Move frozen foods from one freezer atmosphere to another with all possible speed, as near optimum temperature as possible.

Retailers should:

1. Move frozen foods from delivery truck into freezer storage with no delay at room temperatures.
2. Operate frozen food cabinets at near 0° F.
3. Avoid filling frozen food cabinets above the safe-fill level.
4. Display easily interpreted temperature indicators on frozen food cabinets to assure themselves and consumers that the foods are being held at correct temperatures.
5. Rotate stocks in cabinets to insure proper turnover of foods.
6. Dispose of damaged or torn packages.

Consumers should:

1. Place frozen foods in insulated freezer bags (or double paper bags) at time of selection.
2. Move frozen foods as quickly as possible from retail grocery to home frozen food storage.
3. Store frozen foods at home no longer than the maximum time recommended for both the food and storage equipment used.
4. Observe conditions of frozen foods in retail stores. Call retailer's attention to misshapen, soiled, or torn containers, to excessive frost or moisture on the cabinet, and to temperatures in excess of 0° F.
5. Recognize the fallacy of the "squeeze test" for determining the condition of frozen foods. Even though foods feel hard frozen, they may be of poor quality if temperatures are not near 0° F.
6. Recognize the importance of zero degree temperature if best quality is to result.

Frozen Food Handling--

(Concluded from Page 1, Col. 5)

States will begin work on a survey covering handling of frozen foods in some 5,000 retail stores.

National Association of Frozen Food Packers, which is cooperating with the food and drug officials in making a study of frozen food handling, indicated that it may also collect retail market data through its members.

The survey will check handling methods, temperatures of foods on display and in the back room, and delivery methods. It will also seek answers to some 100 questions.

The questionnaire has been approved by representatives of the National Association of Food Chains, Super Market Institute, and the National Association of Retail Grocers, it was reported.

A report on the study is expected to be made at the NAFFP convention in Chicago next March. Purpose is to provide data for developing a model state code covering the marketing of frozen foods.

Penn Controls Names Carnahan Sales Chief

GOSHEN, Ind.—H. M. Carnahan has been appointed director of sales, Penn Controls, Inc., according to Ralph S. Penn, president.

Carnahan

It was also announced that Paul O. Penn, assistant to the president, who has been handling the sales management responsibility, will devote full time to corporate affairs.

Carnahan will be responsible for the control firm's entire sales activities, both foreign and domestic.

He graduated from the University of Pittsburgh in 1935. He has spent more than 20 years in the heating and air conditioning industry, much of the time with American Radiator & Standard Sanitary Corp., where he was vice president for its Sunbeam Div. He was also sales manager of residential heating and air conditioning equipment for Airtemp Div. of Chrysler Corp.

Carnahan also served as director of sales of Cherry-Burrell Corp. in Chicago, coming to Penn from that company.

Declares Dividend

MARINETTE, Wis. — Ansul Chemical Co. declared 30 cents dividend on common stock payable Oct. 15 to stockholders of record Oct. 1.

For your
REFRIGERATION, AIR CONDITIONING
and HEATING UNIT NEEDS . . .

Specify Quality-Controlled
PHELPS DODGE COPPER TUBE!

- All tempers and sizes for use in original equipment.
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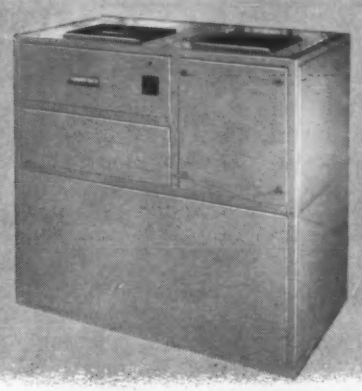
For more information about products advertised on this page use Information Center, page 22.

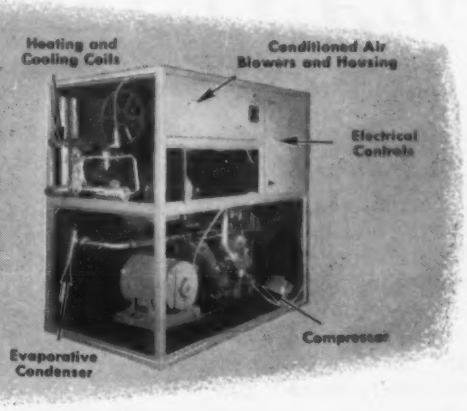
DUNHAM-BUSH

"CPU" COMMERCIAL PACKAGE UNITS

Pre-engineered units . . . each a complete air conditioning system housed in one cabinet. Each unit is entirely self-contained . . . with evaporator, compressor, evap condenser and pump, fans, motors, piping and controls. Installation requires only connection to duct, power to control panel, and water make-up line.

Units feature patented Inner-Fin cooling coils; quiet operating compressors; and forced-draft, blow-through type Inner-Fin evap condensers. Available in 10, 15, 20, 30 and 40 Ton models.





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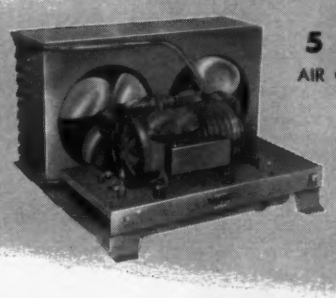
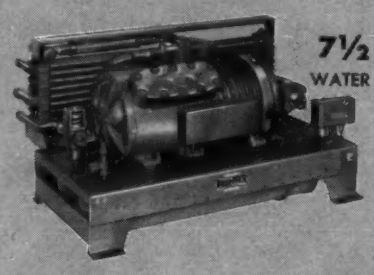


5 H.P.
AIR COOLED



7½ H.P.
WATER COOLED

BRUNNER-METIC 3, 5 and 7½ H.P. UNITS

These 4 and 6 cylinder motor compressors and condensing units in 3, 5 and 7½ H.P. units now offer you even greater flexibility in unit selection. Backed by the simplest, most complete, most satisfactory warranty program in the industry, together with a nationwide parts depot, you'll find the Brunner-Metic line a wise selection for all your refrigeration and air conditioning jobs.

NEW AIR CONDITIONING PRODUCTS TO PEP UP YOUR SALES

BRUNNER SINCE 1906

heat-x

HEAT-X "ARPC" PACKAGE CHILLERS

These air cooled package chillers, designed primarily for residential air-conditioning applications, are furnished with 2, 3 or 5 H.P. compressors, Inner-Fin air cooled condensers, water chillers, superheaters, blower fan, and necessary controls. The cabinet is finished in blue aluminum paint.

RCU' models (less water chiller) were designed for use with remote DX coils.

Dunham-Bush, Inc.

WEST HARTFORD 10 • CONNECTICUT • U. S. A.

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heat-x BRUNNER SINCE 1906

For more information about products advertised on this page use Information Center, page 22.

SLANTS ON SERVICE

"Slants on Service" is a "package" devised by the NEWS to meet the needs of busy servicemen and contractors.

Leaks, Rapid Discharge May Burst Condensers

A surprising number of water-cooled condensers burst during the summer, according to the service manager of a major manufacturer.

Normally, of course, temperature of the refrigerant in the condenser, whether gas or liquid, is well above the freezing point of the water. A small leak in the system, however, can permit the liquid in the condenser to evaporate during the off cycle. Such evaporation could freeze water in the condenser, and the expanding ice could break the condenser tubes.

The leak could be in the lines, expansion valve, or compressor vales.

Water-cooled condensers can also freeze and burst during service operations if the serviceman is not careful. If, for example, the serviceman discharges the system too rapidly without first draining water out of the condenser, evaporation of the liquid refrigerant in the condenser will freeze the water.

So it's best always to drain the water out of the condenser before discharging the system.

For Your Reprint Copy

"Emergency Diagnosis, Repair of Hermetic Unit Electric Components," by John L. Zant, mail this ad with your name and address to: Air Conditioning & Refrigeration News, 450 W. Fort, Detroit 26, Mich.
Only 25¢ each.

'Would Relieve Carriers'

Wholesaler Believes All-Around Savings Would Result If Mfrs. Pre-Paid Freight on Units Shipped to Wholesalers

FORT MONROE, Va. — Savings all around—to manufacturer, common carrier, and wholesaler—would result if manufacturers pre-paid freight on the equipment shipped to wholesalers, Charles Woodward of Refrigeration Suppliers, Norfolk, Va. believes.

He told a recent meeting of Region III, Air Conditioning and Refrigeration Wholesalers, that "consolidated freight bills would relieve the carriers of a terrific expense."

'CARRIERS COULD BILL MFR. ON TOTAL SHIPMENTS'

"They could bill the manufacturer for his total shipments at a much lower cost than splitting them up and collecting for each individual shipment.

"This cost would be used by the manufacturer to determine his total selling price to the wholesaler and would not show as an extra item on their invoices to us, nor be billed later.

"This cost," Woodward declared, "is just as real as the cost of a motor on a condensing unit. Pre-paid transportation cost figured into the selling price at the manufacturer's level is only logical.

"How many times have you attempted to quote, say, cooling coils and a large condensing unit you may not have in stock," he asked.

"How simple it is to pick the coils off the price sheet and how difficult it is to determine your actual cost on the condensing unit. Pre-paid freight included in the price of the unit would make it just as easy to determine the cost of the units as the coils."

"A list of classifications on the principle items we handle would help us determine whether the proper rate has been applied in the case of collecting freight bills.

"However, if this transportation cost were an expense of the manufacturer, he would be more interested in seeing that the proper classification and rates are applied.

"This would justify a traffic expert in the case of most manufacturers where it would not be practical for the average wholesaler," he argued.

"Another serious condition is when the weight to value ratio of a shipment is low, in the case of f.o.b. factory shipments, especially when price sheets are in the hands of our customers.

"We can find ourselves making a mark-up on as little as 75 to 80% of the amount of the invoice to our customers—the remaining 20 to 25% passed on as transportation.

'TRANSPORTATION CAN AMOUNT TO 10%'

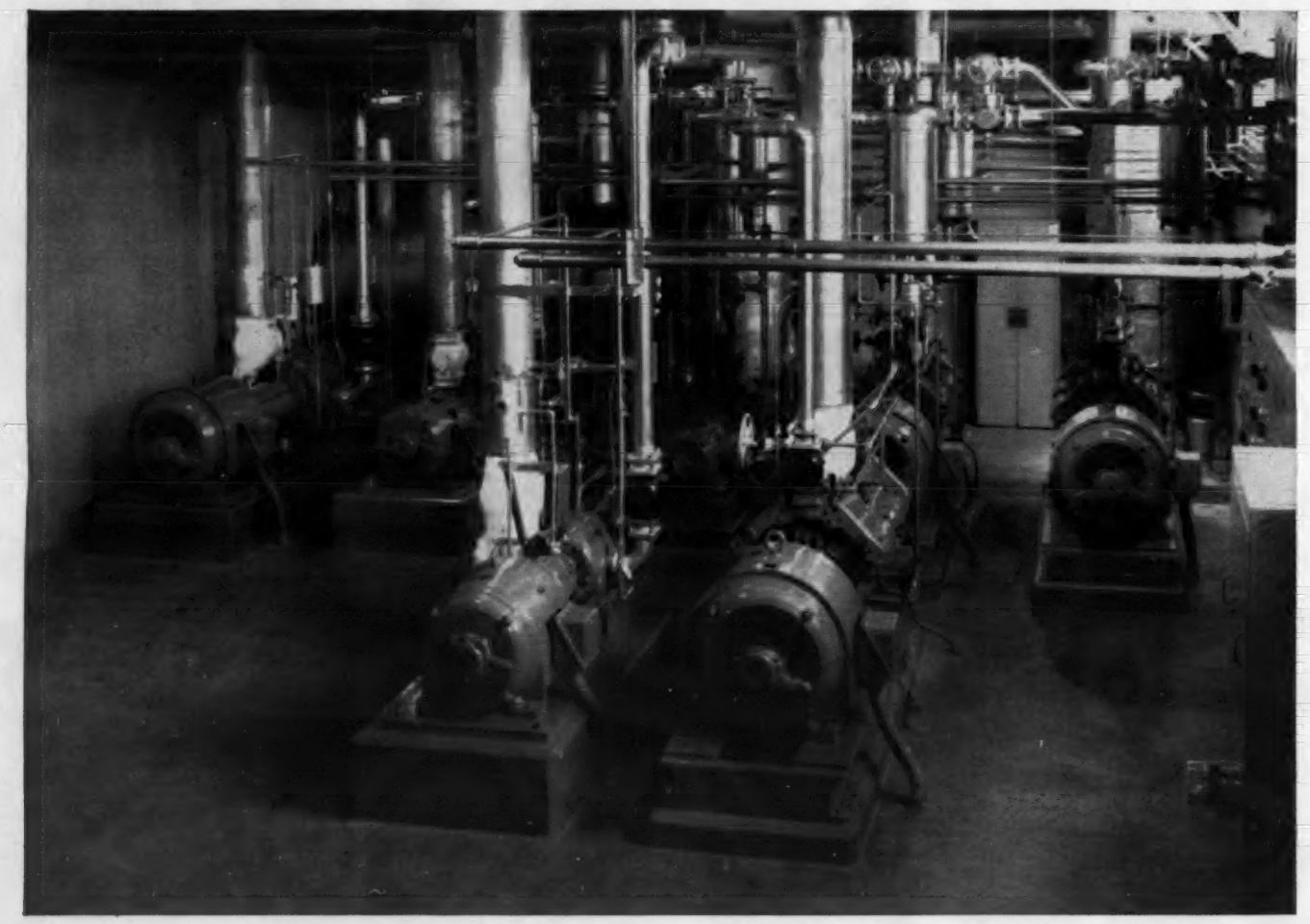
"This may be an extreme condition, but transportation can easily amount to 5 to 10% of the invoice. I'm sure you've all heard complaints from your customers when transportation shows on the invoice. They can't argue with a freight bill from a common carrier, but they hate to see this cost on our invoices.

"Damaged shipments are a very troublesome expense to the wholesalers. Procedures for settling claims are rigged in favor of the common carriers.

"Damaged shipping containers are very troublesome.

This condition could be corrected with better packaging on the part of some manufacturers and the refusal of the carriers to accept shipments which are not packed adequately," Woodward suggested.

WAGNER ELECTRIC MOTORS...THE CHOICE OF LEADERS IN INDUSTRY



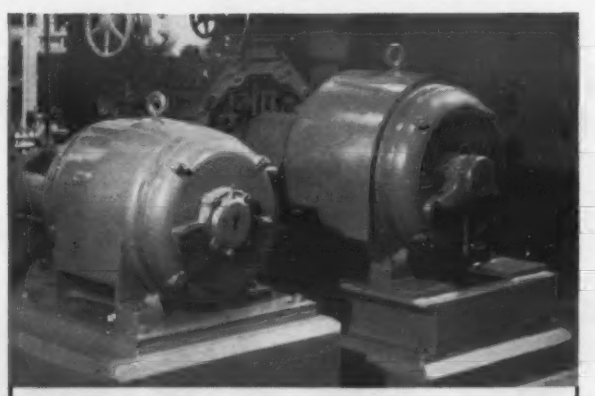
How to freeze 160,000 lbs. of food a day!

FROZEN FOODS have changed the eating habits of us all—in a few short years! Today food freezing has become big business. Take Turlock Refrigerating Company, for example. This California Company operates a frozen foods plant with a storage capacity of 960,000 cubic feet and turns out 80 tons of frozen food a day. Its engine room, shown above, is equipped with seven compressors driven by Wagner Motors with a combined rating of 660 horsepower.

Five of these Wagner Motors, rated 75 to 125 hp, are of the increment start type which start heavy loads smoothly, and with a minimum of voltage drop and line disturbance. A sixth motor is a Wagner two-speed motor, rated 60/30 hp.

Wagner Motors are first choice of many large users and manufacturers of refrigeration compressors, because they have plenty of power to stand up under the steady grind demanded by these applications.

Your nearby Wagner field engineer, expert in motor application, can help you select the right motor for your needs. Call the nearest of our 32 branch offices, or write us.



Motor at left is a Wagner Type MDP-1, 60/30 hp, 2-speed motor. At right is a Wagner 125 hp, 2-step increment start motor. These *standard* Wagner Motors meet specialized needs for Turlock.

Wagner Electric Corporation
SERVING INDUSTRY SINCE 1891

VISIT US AT BOOTH 672 — 10TH EXPOSITION
AIR CONDITIONING AND REFRIGERATION INDUSTRY

Wagner Electric Corporation
6441 Plymouth Ave., St. Louis 14, Mo., U.S.A.

WM57-6

ELECTRIC MOTORS • TRANSFORMERS • INDUSTRIAL BRAKES • AUTOMOTIVE BRAKE SYSTEMS—AIR AND HYDRAULIC

Filtrine "Taste Master" PURIFIERS for

WATER - COOLERS- ICE MAKERS

Stop ...rust, dirt chlorine taste
...service breakdowns due to rust & sludge

Insures service satisfaction for all coolers, ice-makers! Clear, taste-free water ... crystal ice ...every day ... in all locations.

FILTRINE MFG COMPANY
216 W. PROSPECT ST. • WALDWICK, N. J.

For more information about products advertised on this page use Information Center, page 22.

HALSTEAD & MITCHELL ENGINEERS PROVE . . .

A 100-TON COOLING TOWER CAN BE QUIET

HERE ARE TWO, NEW LARGE SIZES ADDED TO HALSTEAD & MITCHELL'S COMPETITIVELY-PRICED EC COOLING TOWER LINE

THE EC LINE. The addition of the 80- and 100-ton capacity towers extends the range of the more-value-per-dollar EC line. All 12 models, 5 to 100 tons, have outstanding features never before offered in this price group.

These include increased corrosion resistance due to rugged, 14-gage steel cabinets (12-gage sumps on the largest sizes) —weatherized by application of Vinsynite, Vinyl Zinc, and Chlorinated Rubber coatings. Exclusively, H&M offers pressure-creosoted wetted deck surfaces with the industry's only 20-Year Guarantee against rotting or damage due to fungus attack. New, sealed fan bearings are lubricated for life. Gravity-type distributing pans reduce pumping head, and cut down windage losses. Sump water levels are automatically controlled by integral float valves.

QUIET. Large diameter, four-bladed, deep pitch fans are belt-driven at low speeds by special weather and splash-proof motors. The EC-80 and EC-100 are driven at speeds of only 400 and 450 RPM. They're really quiet! Twin fans and drives power the three largest sizes, and all fans are of zinc plated, chromate dipped mild steel.

EC Series Cooling Towers are available in capacities of 5 thru 100 tons in standard, factory assembled models, or as Take-Aparts (ECK Series) for difficult-to-get-at installations. Residential, direct-drive ECD Series, with all the custom features and also competitively priced, come in capacities of 2 thru 7½ tons. Call your nearest Halstead & Mitchell wholesaler for delivery and prices or write: *Halstead & Mitchell, Bessemer Building, Pittsburgh 22, Pa.*

WRITE FOR COMPLETE DETAILS

HM Halstead & Mitchell

For more information about products advertised on this page use Information Center, page 22.

Inside Dope

By GEORGE F. TAUBENECK

(Concluded from Page 1, Col. 1)

asking you to turn on the lights in your home.

A method by which specially coated sheets of glass can be made to produce light has been instigated by Westinghouse engineers. Transparent phosphors can be sandwiched between two sheets of glass and coated with electrical conductors, they have discovered.

During the day this glass would allow sunlight to come through, and permit the viewer to look out (or in) in the customary manner.

At night, however, electricity would be applied and the transparent phosphor would emit light.

These transparent electroluminescent windows would provide, in effect, daylight 24 hours a day.

Chameleon-like, color changing panels—no thicker than window-glass — can line and light an entire wall or ceiling, and give off effervescent luminescence equivalent to that found in a modern well-lighted office.

By freeing light from the confines of point or line sources such as incandescent or fluorescent lamps, electroluminescent lighting promises to spark totally new concepts of lighting. In the future it will be integral with walls and ceilings.

And because electroluminescence is not restricted to flat planes, this new light source may go into the construction of domes, balustrades, and other architectural designs.

Whee!

Giordano Honored

Salvatore Giordano, president of Fedders-Quigan Corp., has been named "Man of the Year" by the Columbian Civic Club, Newark, N. J.

Previous recipients of the award have been Dr. Enrico Fermi, nuclear physicist and pioneer in atomic bomb development; General Lester Groves, head of the Manhattan project during World War II; J. L. Cowen, chairman of the board, Lionel Corp.; and entertainer Perry Como.

The award is presented annually to one who has brought himself from humble beginnings to a position of national prominence.

Giordano, who was born in Brooklyn of immigrant parents, began his industrial career in 1927 at the age of 17 as a floor boy for Frank J. Quigan, Inc., a firm specializing in handbag frames. In 1945, when the Quigan firm bought controlling interest in the Fedders Mfg. Co., Buffalo, Giordano was made president of both firms.

Giordano worked constantly for greater product diversification, and in 1947 Fedders-Quigan entered the room air conditioner business. He was responsible, also, for the development of the firm's heating division and has added such products as unit heaters, convector radiators, baseboard, wall fins, and remote air conditioning.

Home Freezer to the Fore

Fretting over the huge inheritance tax bite the Government would put on his estate when he died, an aged Englishman queried his attorneys on how to avoid such a catastrophe. They told him he could parcel out his property while still alive.

However, such gifts legally wouldn't be valid unless he lived at least five years afterward.

The old boy acted as advised. Unfortunately, he died three months prior to the end of the five-year period.

His heirs thereupon sought advice from a family doctor who, after some thought, suggested putting the corpse in their big home freezer.

He explained: "There he will keep very well for six months or so. Then you can thaw him out, put him in bed, and send for me. I'll certify his latter-day death. Your properties will be saved. And no one will be the wiser."

Three weeks later the doctor passed away. Heirs carried out the doctor's plan and, in time, called in another doctor to examine the now-defrosted testator. This medico allowed as how an autopsy would be required before he could certify the cause of death.

The heirs agreed; the autopsy was performed; and the doctor submitted his findings. He reported that death apparently was due to natural causes.

"However," he stated, "there is an odd condition which troubles me. In the stomach I found traces of strawberries. Fresh strawberries in January."

Heaving a sigh of relief, a spokesman for the estate explained:

"That is quite simple, doctor. You know we own a home freezer."

Highbrow Refrigeration

Newly developed low temperature techniques make possible the isolation and preservation of normally short-lived chemical "radicals" for relatively long periods.

What does this mean to you and me? A whole new series of synthetics!

Chemical "radical" is a fragment—an atom, a group of atoms, or part of a molecule—which combines with another fragment to make a stable compound. Each such fragment, for as long as it may exist separately, is unstable. It will have one or more of its outermost electrons "unpaired"—that is, not coupled with another electron in another fragment.

Each unpaired electron acts like a small magnet; and when two radicals meet, their electrons marry to produce a stable compound.

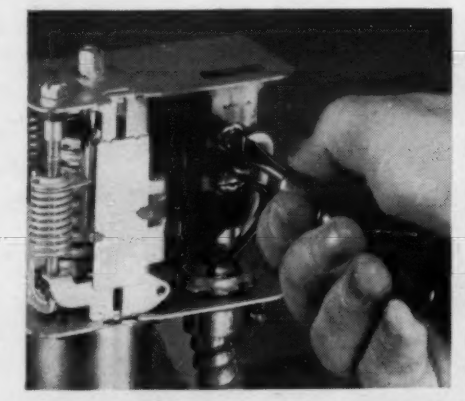
Free radicals are present in flames, electric arcs, the atmosphere, stars, interstellar dust, and the human body. They may be produced by heat, strong light, or the action of chemical reactions.

Once produced they initiate a chemical chain reaction leading to the production of chemical compounds. To isolate these transitory free radicals, new techniques have been developed.

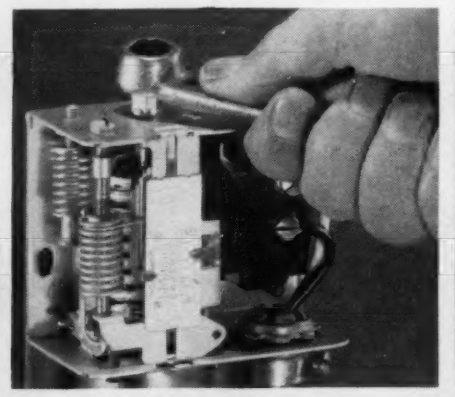
Essentially, these techniques involve generating high temperature streams of free radicals and trapping them on a very cold surface.

Both liquid nitrogen and liquid helium have been used as coolants. For reasons not yet fully known, ultra-low temperatures insure their longevity for scientific study.

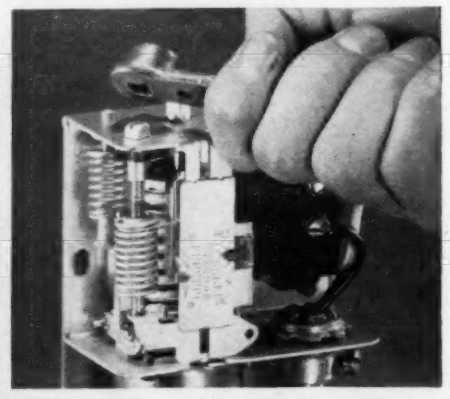
New use for refrigeration!



1. Mount control (bracket furnished), connect capillary, remove control cover and make 2 electrical connections (terminals are completely accessible).



2. Turn the range screw to either raise or lower the cut-in setting as required... differential does not change.



3. Turn differential screw to raise or lower cut-out setting independently of cut-in setting. This widens or narrows the differential.

Easier to Install...

Simpler to Adjust!

PENN "270"

SINGLE-POLE REFRIGERATION CONTROL

Series 270 is available in a variety of models for every refrigeration job.

Combines simple design with PENN "Snap-flex" contact action

Installation is so simple and fast with the Series 270. And, adjustment is even simpler because of Penn's direct-reading, calibrated scale indicating cut-in and cut-out settings. Time-wasting subtraction or addition is eliminated.

Once installed, the Series 270 will perform accurately and stay-on-the-job longer. One reason is the exclusive, "Snap-flex" contact structure with "roll-wipe-snap" action on closing and opening. There's no bounce... no closing arc... no welding of contacts.

Try the Penn Series 270... in either single or double pole... on your next job and you'll discover a big difference. Ask your wholesaler for Penn.

PENN CONTROLS, INC. Goshen, Indiana

EXPORT DIVISION: 27 E. 38th ST., NEW YORK, N.Y.

AUTOMATIC CONTROLS FOR HEATING, REFRIGERATION, AIR CONDITIONING, APPLIANCES, PUMPS, AIR COMPRESSORS, ENGINES

For more information about products advertised on this page use Information Center, page 22.

NCRSA To Eye 'Promoting Distributors' Services Value' at Nov. Chicago Confab

PHILADELPHIA — Various aspects of "Promoting the Value of Distributors' Services" will be explored during the 11th annual convention of the National Commercial Refrigerator Sales Association in Chicago's La Salle hotel, Nov. 18 and 19.

In four sessions, the distributors will hear seven talks and two panel discussions on that theme. Other convention features include a film presentation on produce packaging and a dinner entertainment by James K. Thompson, billed as the "world's greatest card expert and humorist."

For the ladies, the association is scheduling a luncheon at the Kungsholm Scandinavian restaurant followed by a performance of the puppet grand opera on Nov. 18 and a visit to the Don McNeill Breakfast Club and a tour of the Merchandise Mart on Nov. 19.

Complete program follows:

SUNDAY, NOV. 17

12:15 p.m. — Board of Directors Luncheon Meeting—Parlor D.
2 to 6 p.m.—Registration of Delegates—Mezzanine Foyer.
4:30 p.m.—NCRSA-CRMA Joint Relations Committee Meeting—Parlor C.

MONDAY, NOV. 18

8:30 a.m.—Registration of Delegates—Mezzanine Foyer.
9:30 a.m.—General Meeting of Members and Guests—Illinois Room.
Convention Called to Order by President S. W. Davis, Jr.
Annual Address of the President—"Quality," S. W. Davis, Jr., president, S. W. Davis, Jr., Inc., Greensboro, N. C.
"Can Membership in the Association Cure All Industry Problems?" H. A. Hattenbach, first vice president, National Commercial Refrigerator Sales Association, The Hattenbach Co., Cleveland, Ohio.
"Which Way Does Harry Turn?" Henry M. Haase, president, York Div., Borg-Warner Corp.
"Men Make the Difference," Verne R. Martin, sales consultant, Newton, Iowa.
Adjournment.

12:30 p.m.—LUNCHEON—CENTURY ROOM.
2 p.m. — General Meeting — Illinois Room.
Report of the secretary, Marie H. Lawton, executive secretary, NCRSA.
PANEL SESSION — "THE STORE OF TOMORROW."
"Locating, Designing, and Engineering the Store of Tomorrow," Ralph E. Ernst, Modern Stores, National Association of Retail Grocers in the United States.
"Equipping the Store of Tomorrow for Maximum Sales," A. B. Biddle, executive vice president, Hussmann Refrigeration, Inc.
"Financing the Store of Tomorrow," Milton I. Schwartz, executive vice president, S. & M. Schwartz & Co., Div. of Straus-Duparquet, Inc., New York City.
Question and Answer Period.
Adjournment.
6:30 p.m.—Reception—Chicago Room.
7:30 p.m.—Dinner—Illinois Room.
"It's In The Cards," James K. Thompson, card expert and humorist.

TUESDAY, NOV. 19

9:30 a.m.—General Meeting—Illinois Room.
Film Presentation—"Produce Packaging," E. I. du Pont de Nemours & Co., Inc.
"Putting Life Into Our Product—the Distributor's Responsibility," George F. Wiedemer, president, Cable-Wiedemer, Inc., Rochester, N. Y.
"How Our Salesmen Can More Efficiently Sell Our Services to the Consumer," George A. Lucas, president, Allied Store Engineering Corp., East Hartford, Conn.
"Crystal Balls, Witchcraft, and Hot Coffee," Karl O. Nygaard, director of research, B. F. Goodrich Co.
Adjournment.

12:30 p.m.—LUNCHEON—CENTURY ROOM.
2 p.m. — General Meeting — Illinois Room.
PANEL SESSION—"IF I WERE A MANUFACTURER. . . ."
"Why I Would Sell Through Distributors," Dudley M. Cawthon, president, Dudley Cawthon, Inc., Miami, Fla.
"What I Would Do to Teach My Distributors to Be Good Distributors," Ray Winther, president, Ray Winther Co., South San Francisco, Calif.
"I Would Offer Distributors a Well-Rounded Sales Policy," George Schoenbacher, president, Red-E-Cold Refrigerator Co., Chicago.
"How I Would Help to Sell My Distributors' Services to Our Customers," Jack Thurman, vice president, Pritchett-Stephen Refrigeration Co., Fort Worth, Texas.
"Furthering Our Mutual Aims and Interests," (A Report on Activities of the Joint Relations Committee), H. N. Corbin, vice president, sales, C. V. Hill & Co., Inc.
Report of the Nominating Committee.
Election of Officers.
Introduction of New Officers.
New Business.
Adjournment.

Howard J. Altman Dies

ERIE, Pa.—Howard J. Altman, 59, well-known appliance executive in this area, died recently after a brief illness.

Altman began his sales career with the Hoover Co. and served that company in a number of executive posts here and in other eastern cities. He returned to Erie in 1935 as sales manager of the Erie County Maytag Co.

In 1944 he joined Westinghouse Electric as appliance sales manager for northwestern Pennsylvania. He was later advanced to the post of manager of the Erie Westinghouse branch, in which post he remained until recently.

Looking for a Business to Buy . . . ?
Check the Business Opportunities Section in the classified advertising columns.

READY TO INSTALL OR SERVICE IN SECONDS!

ALCO "T" SERIES THERMO VALVES

They come apart in the line.
No torch, saw or tube cutter needed!
You save time and trouble!

SEE THEM AT OUR BOOTH 444 AT CHICAGO, NOV. 18-21.

Tops In Air Conditioned Bldgs.

Rockefeller Center Has 15,382 Tons of Cooling In 15 Bldgs.

NEW YORK CITY — Rockefeller Center's integrated air conditioning system became the largest in the world for office buildings when two new giant refrigerating machines serving the 31-story Americas building, were started up recently.

Surpasses Huge Pentagon Bldg.

Installation of the additional equipment, with a total cooling capacity of 1,100 tons, dropped the huge Pentagon building at Washington, D. C., into second place after a 15-year reign as the leader, according to Cloud Wampler, chairman of the board of Carrier Corp., which has provided the major share of the Center's cooling capacity.

The giant compressors serving the 15-building, mid-town skyscraper development now have a rated capacity of 15,382 tons. The capacity of the Carrier system in the Pentagon building is 14,300 tons.

G. S. Eyssell, president of Rockefeller Center, Inc., stated that Rockefeller Center's air conditioning equipment and installation to date represents an investment of $12,000,000.

Plan 17,700 Tons Of Cooling

"Our plans call for total cooling capacity of 17,700 tons in Rockefeller Center buildings already in existence," he said. "This is exclusive of the equipment in the new 47-story Time & Life building now under construction and scheduled for occupancy late in 1959. At the present time the refrigeration cycle in the Center's air conditioning program is 85% completed."

The growth of Rockefeller Center's central air conditioning installation was termed typical of the concept of the Center as a living and growing establishment. New buildings have been added at a steady rate since 1932, to a present total of 15, with excavation for the new Time & Life building across the Avenue of the Americas more than 50% completed.

Firm Has Cooled 832 Bldgs.

Carrier Corp. has provided central air conditioning systems in 832 office buildings throughout the nation, serving 103,407,000 sq. ft. of office space with 371,316 tons of refrigeration capacity, Wampler revealed. These figures include installations completed prior to May, 1957, in old and new buildings.

Within ten years, all major office buildings in the United States will have been air conditioned, he predicted.

The cooling capacity provided by Rockefeller Center for its tenants is augmented by occupant-owned room air conditioning units in some areas, and by a 300-ton centrifugal refrigeration machine installed on the 58th floor of the RCA building, Eyssell pointed out.

Owned by American Cyanamid Co. and serving the seven floors occupied by the company, it is believed to be the highest installation of air conditioning equipment serving any building.

Water used in the operation of all Rockefeller Center air conditioning is recirculated to avoid waste, Victor Borella, vice president in charge of operations for the Center, reported.

Plans for installation of the additional 2,318 tons of refrigeration equipment to complete the Center's air conditioning program are already in process.

All 20 restaurants and the nearly 150 stores in the Center are air conditioned by six central plants which serve the famous 12½-acre "city within a city" in which there are 34,000 employes and 126,000 daily visitors.

The 10 largest air conditioning installations for office buildings, rated on cooling capacity, according to Carrier Corp., are:

Rockefeller Center, New York City	15,382 tons
The Pentagon, Washington, D. C.	14,300 tons
Merchandise Mart, Chicago	8,500 tons
Southland Center, Dallas*	6,450 tons
Empire State Building, New York City	5,250 tons
Gateway Center, Pittsburgh	4,500 tons
Socony Mobile Building, New York City	4,285 tons
United Nations Secretariat, New York City	4,168 tons
New York Coliseum, New York City	4,050 tons
Prudential Building, Chicago	3,400 tons

*Under construction.

For more information about products advertised on this page use Information Center, page 22.

Atlanta Contractors Call Proposed Ordinance 'Duplication'

ATLANTA — Robert Warren, president of the Warm Air Heating Contractors Association, says Atlanta heating contractors have planned strong opposition to a proposed city ordinance which they contend would greatly increase costs to homeowners.

The proposal in question is an amendment which would establish a city examining board for steamfitting, hot water heating, air conditioning, and refrigeration work. Mechanics in the city would have to be licensed to do each of these jobs.

Alderman John A. White, chairman of the Building and Electric Lights Committee, said his group will hear the proposal later this fall. He added that his committee is writing to the other cities to see how the problem is handled. He said at least two weeks' notice will be given before a public hearing on the matter.

The contractors contended at the recent meeting that the proposal would be a duplication of the protection which has already been achieved by the city's heating, ventilating, and air conditioning code.

Marsh To Provide Free Bus Service During Exposition

SKOKIE, Ill. — Throughout the 10th Exposition of the Air Conditioning and Refrigeration Industry in Chicago Nov. 18-21, Marsh Instrument Co. will provide free bus service between major loop hotels and the International Amphiteatre, it has been announced.

Modern, comfortable buses are scheduled to operate daily at 15-minute intervals during show hours.

"In the morning operations will begin one-half hour before show opening and in the evening buses will run until one-half hour after show closing," the company said. "This will permit personnel working at the various exhibits to take advantage of this service. Extra buses will be furnished during the peak morning and evening activity.

"Hotels at which buses will make regular stops are the Sherman, Morrison, Palmer House, and Conrad Hilton, according to the announcement.

"Everyone attending the Exposition is cordially invited to make full use of this frequent, safe transportation service."

Plumbing Contractors Set Up Institute To Handle Promotions

WASHINGTON, D. C.—Creation of a permanent sales promotion and publicity arm to promote the plumbing, heating, and cooling activities of the combined plumbing industry is now in the final stages, reports the National Association of Plumbing Contractors.

Establishment of the organization, which may be called the Plumbing-Heating-Cooling Institute, is in the hands of an "all-industry" committee representing plumbing contractors, manufacturers, distributors, wholesalers, and union.

An interim committee is currently studying the financing of the new publicity program and casting about for an executive director to head it. This committee was expected to report to the all-industry committee in Chicago on Oct. 24.

Objectives assigned to the new organization are to expand present industry volume, expand the industry's share in new construction dollar, serve as a communications center, and coordinate the industry's promotional programs.

The all-industry committee has already received a recommendation that the Plumbing and Heating Industries Bureau be expanded and altered to handle the new and enlarged program.

New Glasfloss *Safety-Grille* Filters have been thoroughly tested in industrial and commercial installations. Users report complete satisfaction in all types of high-velocity, high moisture-content and extra-dirty applications. These new filters eliminate danger of cut hands and wrists from sharp or broken metal grilles. New chipboard grille is stronger, resilient when bent, provides effective filtering in all types of installations.

Glasfloss* fiber glass Safety-Grille* filter

TRADE MARK

stronger... tested in service... UL approved

Now, Glasfloss Fiber Glass Filters have a new design. The old-type metal grille has been replaced completely by a new chipboard grille, providing you with a filter that is safer to handle, stronger in design, and highly efficient.

CHECK THESE FEATURES—

1. **SAFER**—New Glasfloss chipboard grille eliminates danger to maintenance personnel of cut hands or infections caused by sharp or broken edges of metal grilles.
2. **STRONGER**—Chipboard grille and frame are one die-cut section; Glasfloss engineered-type construction gives added strength. This means less chance of filter damage in transit, in storage, in handling.
3. **EASIER DISPOSAL**—Used Glasfloss *Safety-Grille* Filters can now be rolled up for quick, simple trash disposal. No more stiff metal grilles!
4. **EFFICIENT**—Available filtering area and initial pressure drop of new Glasfloss *Safety-Grille* Filters are the same as old-type metal grille filters.
5. **TESTED IN SERVICE**—Glasfloss *Safety-Grille* Filters have been tested and proved in service in a variety of industrial and commercial applications.
6. **APPROVED**—Glasfloss Fiber Glass *Safety-Grille* Filters have been approved by Underwriters' Laboratories, Inc.

Don't wait! Test these new filters in your own plant or building now! Get top filtering results—and all these extra features—with Glasfloss. The new Glasfloss Fiber Glass *Safety-Grille* Filters are now available in a complete range of sizes from your local distributor or your nearby PPG Warehouse.

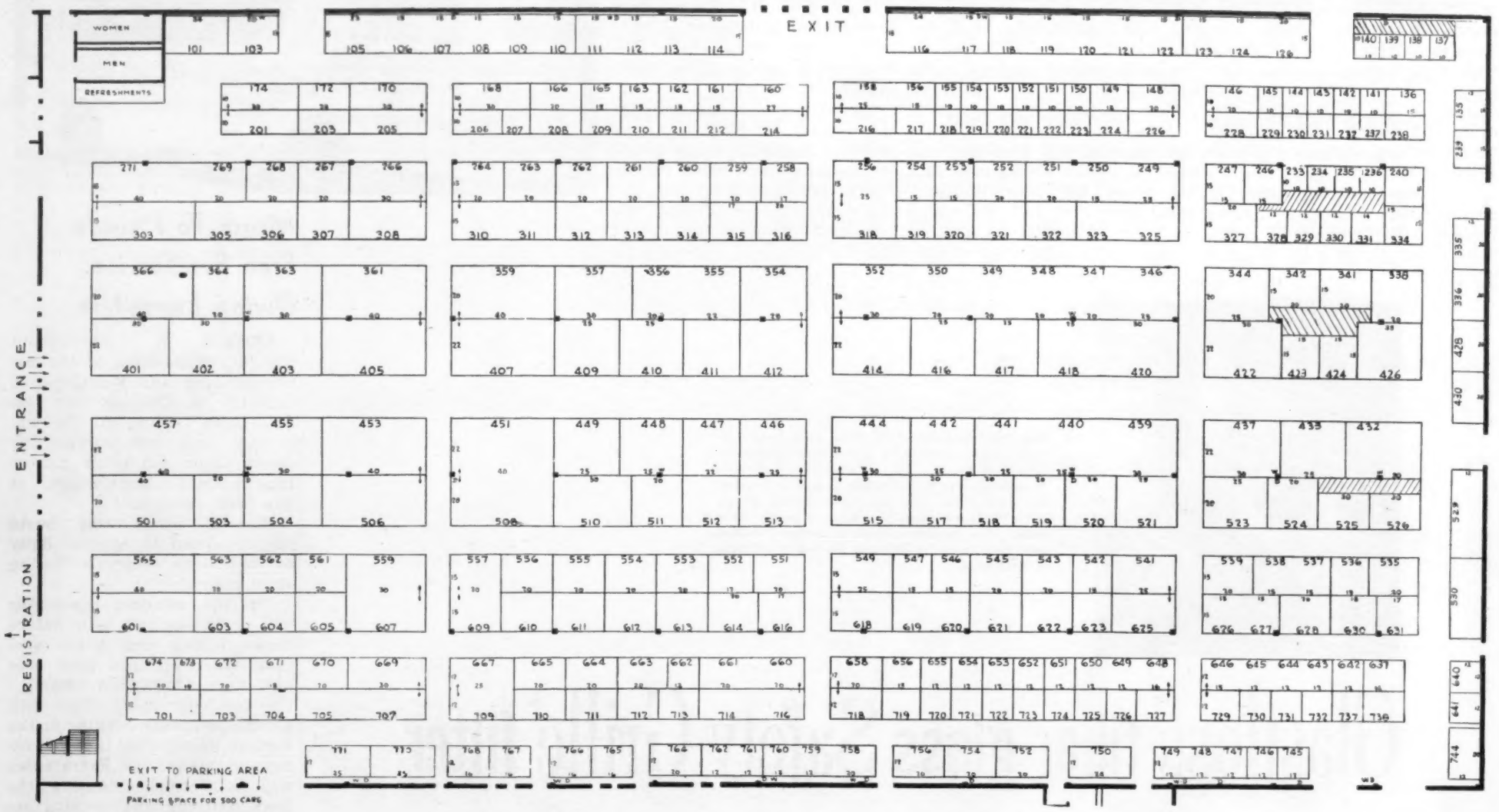
A PRODUCT OF PITTSBURGH PLATE GLASS COMPANY

Sales offices are located in the following cities: Charlotte, Chicago, Cincinnati, Cleveland, Detroit, Houston, Los Angeles, New York, Philadelphia, Pittsburgh and St. Louis

FIBER PPG GLASS PAINTS • GLASS • CHEMICALS • BRUSHES • PLASTICS

PITTSBURGH PLATE GLASS COMPANY

Companies Exhibiting In Industry's Greatest Show



LIST OF EXHIBITORS

COMPANY	BOOTH NUMBER
A-P Controls Div., Controls Corp. of America	310-11
Ace Cabinet Corp.	240-334
Acme Industries, Inc.	418-20
Addison Products Co.	611-12
Aeroquip Corp.	641
Aerovox Corp.	745
Air Conditioning & Refrigeration News	517
Air-Conditioning & Refrigeration Wholesalers	2
Air Con Filter Mfg. Co.	628
Airserco Mfg. Co.	146
Airtemp Div., Chrysler Corp.	105-6-7-8-9-10
Alco Valve Co.	444
Allen-Bradley Co.	767-68
Allin Mfg. Co.	662
American Automatic Ice Machine Co.	503
American Brass Co.	521
American Coils Co.	663-64-65
American Gas Machine Co.	747-48-49
American Name Plate & Mfg. Co.	223
American Platinum Works	744
American Society of Refrigerating Engineers	1
Aminco Refrigeration Products Co.	207
Anderson Chemical Corp.	605
Ansul Chemical Co.	449
Appliance Manufacturer	211
Armstrong Cork Co.	163
Arrow-Hart & Hegeman Electric Co.	232
Bacharach Industrial Instrument Co.	222
Bally Case & Cooler Co.	667-709
Baltimore Aircoil Co.	648-49-50
Bangor Mill & Cooler Co.	602
Barr Mfg. Co.	542
Bastian-Blessing Co.	765-66
Bell & Gossett Co.	525-26
Bendix-Westinghouse Automotive Air Brake Co.	414
Binks Mfg. Co.	230-31
Bohn Aluminum & Brass Corp.	359
Brookside Corp.	428
Brunner Mfg. Co.	349-50-52
Bryant Div. of Carrier Corp.	409
Buchbinder Bros.	316
Bundy Tubing Co.	545
Burr Oak Tool & Gauge Co.	523
Butcher Boy Refrigerator Door Co.	432
Byers Co., A. M.	711
Calgon Co., Div. of Hagan Chemicals & Controls, Inc.	226
Carbonic Dispenser, Inc.	212
Carrier Corp.	510
Carver Pump Co.	145
Century Electric Co.	625
Chase Brass & Copper Co.	562
Chemical Solvent Co.	263
Cobra Metal Hose	720
Coldin Cabinet Co., Inc.	135 & 239
Coleman Co., Inc.	320
Commercial Refrigeration & Air Conditioning	670
Copeland Refrigeration Corp.	118-19-20-21-22
Creamery Package Mfg. Co.	513
Curtis Mfg. Co.	559-607
Custom Dispenser, Inc.	726
Cutler-Hammer, Inc.	430
Cyrus Shank Co.	216
Davison Chemical Co., Div. of W. R. Grace & Co.	364
Dean Products, Inc.	308
Delco Products Div., GMC	448
DeMert & Dougherty, Inc.	673
Detroit Controls Corp.	557-609
Dole Refrigeration Co.	366
Dow Chemical Co.	756
Dunham-Bush, Inc.	346-47-48
du Pont de Nemours & Co., Inc., E. I.	402
Duro-Dyne Corp.	330
Dwyer Mfg. Co., F. W.	331
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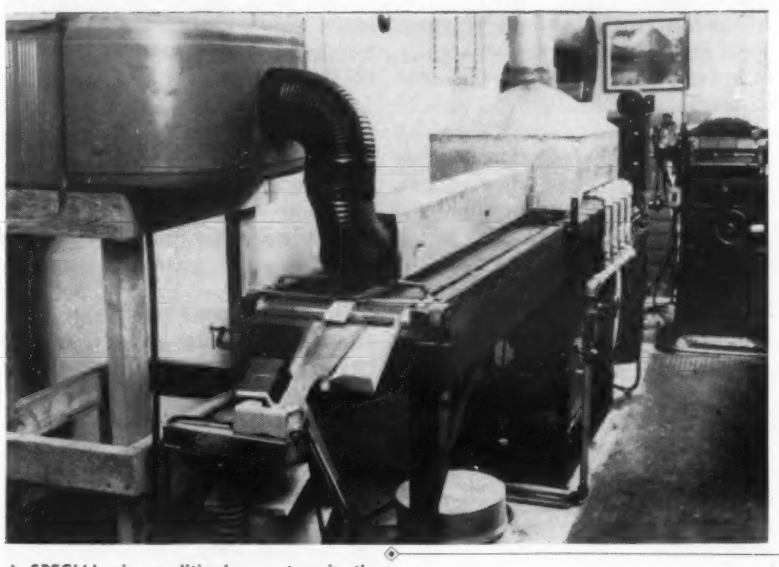
Over Embossed Cards

Room Air Conditioner Places Dehumidified Air Blanket To Dry Ink, Harden Resin Dust



A SPECIAL air conditioning system in the Crescent Card Co., Dallas specialty printing firm, has turned a hot-weather crippled operation into a year-round business. A Carrier Corp. room air conditioner provides a blanket of cool, dehumidified air over the embossed cards emerging from a 130° drying oven. The conditioned air helps firmly set resin dust and colored inks.

* * *

DALLAS—When temperature and humidity soar in Dallas, the Crescent Card Co., a specialty card printing firm, recalls bygone days of slow production, press shut-down, and cards spread over the shop like confetti.

Devises 'Quick Cooling' System

A Carrier "quick cooling" system devised by print shop owner, C. C. Kilpatrick, ended manufacturing problems and loss of profit, thereby gaining year-round operation "in the black."

During hot, humid weather, Kilpatrick had found it necessary to stop the embossing press while cards were spread by hand over blotters to dry ink and harden resin dust. This meant slower output, extra labor costs, and loss of stock from hand prints and ink smears. In some cases, custumers returned cards which had stuck together and smudged.

In analyzing his climate control problem, Kilpatrick conceived the possibility of drying the specialty cards with a small air conditioner. A successful method was achieved by mounting a standard Carrier room unit on a platform at the end of the press conveyor belt to blanket the finished stock with cool conditioned air.

Improves Plan

To improve this unusual plan, air piped from the front grille of the air conditioner is directed onto a 4-ft. section of the conveyor belt. The dehumidified air flowing over the conveyor belt is maintained at a constant 55° which aids in setting the resin dusted over the printed cards and makes possible a perfect embossed printing.

Since the specialty cards have been air conditioned, warm weather production has been stepped up some 40%, to a rapid rate of 6,000 empossed business cards per hour, it was reported.

Amana Names Cooling Sales Push Winners

AMANA, Iowa—Five distributor salesmen have been named as winners in a three-month air conditioner campaign conducted by Amana Refrigeration, Inc.

Winners include LeRoy Rogers, A. Y. McDonald Co., Joplin, Mo.; John Finn, Finn Distributing Co., Wichita, Kan.; John Tate, United Distributors, Omaha, Neb.; L. W. Sharp, Jr., Porter Burgess Co., Dallas; and J. B. Appling, Gough Industries, Inc., Los Angeles.

In announcing the winners, Walter A. Wendler, vice president in charge of sales for Amana, said the campaign was based not only on sales to dealers, but on promotional and merchandising assistance by the salesmen to the dealers.

Each of the salesmen and his wife is receiving a five-day vacation at the Roney Plaza in Miami Beach.

30 N. Y. Airtemp Dealers Win Miami Vacation

DAYTON — Accompanied by their wives, 30 Chrysler Airtemp room air conditioner dealers from the New York City area will enjoy a six-day (Nov. 16-22) expense-paid Miami vacation.

Airtemp's New York branch awarded the Miami trips-for-two to those dealers who sold a specific quota of room units during a certain period of the summer season.

The group will enplane for Miami on Nov. 16 and return via air on the 22nd. While there they will stay at the Seville hotel.

Get Your Share of Winter Profits!

on Room Air Cond. Covers

Send for the New 1957 Directory & Alphabetical Guide

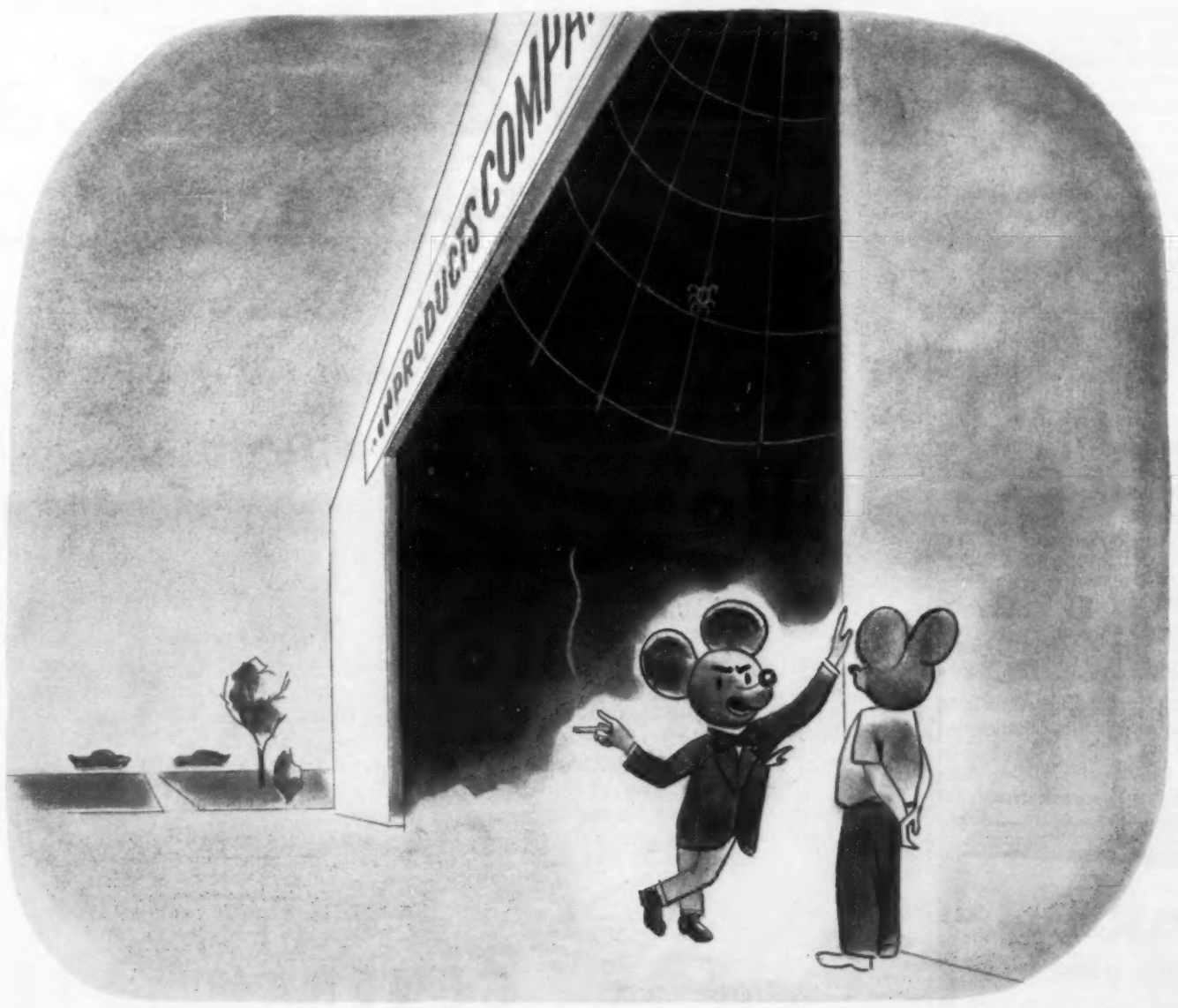
Top Quality, Low Prices, Excellent Markup

JIFFY COVERS CORP.
614 Third Ave., N.Y. 16, N.Y.

Reprints Available

Hermetic Compressor Design, Development, by Henri Soumerai. Only 40¢ each.

Mail this ad with name and address to: Air Conditioning & Refrigeration News, 450 W. Fort St., Detroit 26, Mich.



"Naw, Chester . . . they ain't out of business . . . somebody up in purchasing jes' forgot to order them H & H parts again."

Look for us at the ARI Exposition Booth No. 258

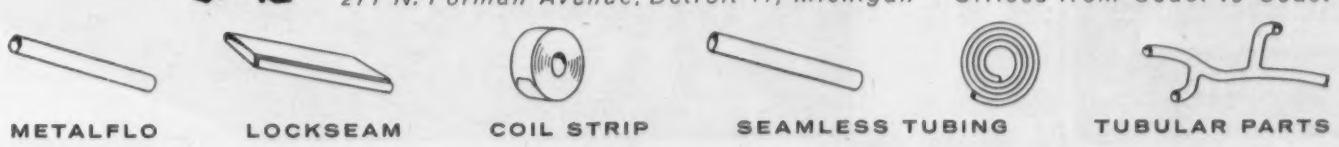
Originators and sole makers of METALFLO tubing

Expect the BEST brass and copper products from

H & H TUBE AND MANUFACTURING CO.

271 N. Forman Avenue, Detroit 17, Michigan • Offices from Coast to Coast

The time to order H&H parts and tubing for the coming air conditioning season is now, before the rush begins. By getting your specifications and quotation requests in early, our engineering facilities can be put fully at your disposal. Not only that, but the opportunity to coordinate your order with our other work can result in better delivery and perhaps even save you money. Think it over, then contact us.



METALFLO LOCKSEAM COIL STRIP SEAMLESS TUBING TUBULAR PARTS

ARI's President Invites YOU To Attend The 10th Exposition of the Industry

By Lud Emde, President
Air-Conditioning & Refrigeration Institute

THE PRESIDENT OF THE ARI SENDS GREETINGS . . .

And with these greetings an invitation for you and the top members of your staff to attend the Air Conditioning and Refrigeration Exposition at the International Amphitheatre, in Chicago, Nov. 18 to 21.

Lud Emde

It is always the pleasant duty of the President to issue these cordial biennial invitations but this year marks the TENTH show and it is something special.

Our industry has been growing so fast that each show has been growing bigger, too . . . larger exhibits, additional companies, bigger staffs, more products, gayer parties.

But the TENTH show is out of this world!

If you can imagine $5 million worth of displays, 7,500 different products, over 2,000 experts on hand to answer your questions, and 20,000 old friends as visitors, you'll get some idea of what's waiting for you in Chicago.

Sound staggering? Well, it staggers us, too. If you weren't aware of it before, let me tell you the industry is growing up awfully fast. There are scarcely a dozen industries in the entire country which support shows of these proportions and it is a matter of real pride that we can.

You may wonder why our industry has such a tremendous show. Let me explain: Because things happen so fast that nobody can keep up with all developments.

That's why we have a show. To let you see, under one roof, EVERYTHING new that's been happening. Where else can you get such valuable business information so quickly?

You can see the equipment, ask questions, get answers. You can stroll up the aisle and ask the competition the same questions and get different answers. Then you can compare. You can tinker with every part or component. All the information you can possibly use is gathered for you ALL IN ONE SPOT.

You'll get ideas, too, from friends in other cities. You'll get a chance to talk shop. You'll get a lot of new ideas and a new look at some old ideas. There's nothing like shop talk to give you a fresh slant.

Of course, there will be a few minutes for relaxation. Chicago, with all its wonderful amusements, restaurants, night spots, theaters, museums, and sporting events, is one of the most colorful cities in the country. The hotels will be full of company hospitality suites beckoning for a bit of fun and refreshment.

There will be a very full day planned, too, for the ladies who accompany you while you are busy at the show.

This TENTH show is like nothing that has ever been produced before. It will be so big and so wonderful that, unless you plan your visit in advance, you'll miss a lot of information and some of the fun.

May I offer a few tips:

1. Bring your associates and the up-and-coming members of your staff. Talk things over right on the spot and if there are any unanswered questions, you can get them while the show is still on.
2. Plan your visit. There will be so many people and things you want to see, there just won't be time enough unless you allot your time carefully. Make appointments ahead of time. Make notes of exhibits you have a special interest in.
3. Don't expect to see it all in one day. This show is really too big for that. Frankly, I don't think you'll be able to see everything and speak to all the people you want to, even if you spend four days there. Remember, there will be 7,500 items on display.
4. Plan to attend the conference sessions of your association. You've got a lot to offer to, and learn from, your friends and associates. The ideas you get are like money in the bank.
5. Bring your wife. She's entitled to a little vacation and she's really interested in your business. She'll enjoy a look at the show.
6. Make your hotel reservations right now! I can't stress this too much. Chicago is a big town with lots of hotels but this is a big show and if you want choice accommodations, now is the time for making reservations.

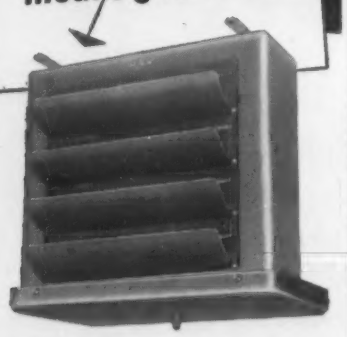
It may be that I sound over enthusiastic. It may be that you think you know all there is to be known about our industry. But wait 'til you see that show! This is something special.

I shall be looking forward to seeing you in Chicago. And I want you to tell me then whether or not you agree with my predictions.

Trying to find the right man for a hard-to-fill vacancy—the NEWS' Classified Ads are read by your man.

Place your ad today!

LARKIN
means good looks



LARKIN HUMI-TEMP UNIT

For clean, smart lines, satin-smooth finish, harmonious color and overall good looks—Larkin leads. Behind this beauty is the quality and performance that keeps Larkin out in front!

Manufacturers of the original Cross-Fin Coil • Humi-Temp Units • Frost-O-Trol Hot Gas Defroster • Air Cooled and Evaporative Condensers • Cooling Towers • Air Conditioning Units and Coils • Direct Expansion Water Coolers • Heat Exchangers

LARKIN COILS INC.
519 MEMORIAL DR., S.E. - ATLANTA, GA.

NOW GENERAL ELECTRIC AIR CONDITIONING AS

Lightest 30-ton unit in the business—
by as much as 2000 lbs.—
and completely self-contained

This new General Electric Unit is not another "octopus" —no outside fan motors, filters, controls or other protruding parts. It's as clean-cut as a 3-ton job. Air discharge can be ducted from front, back or top. And it's up to 2000 lbs. *lighter* than other 30-ton units.

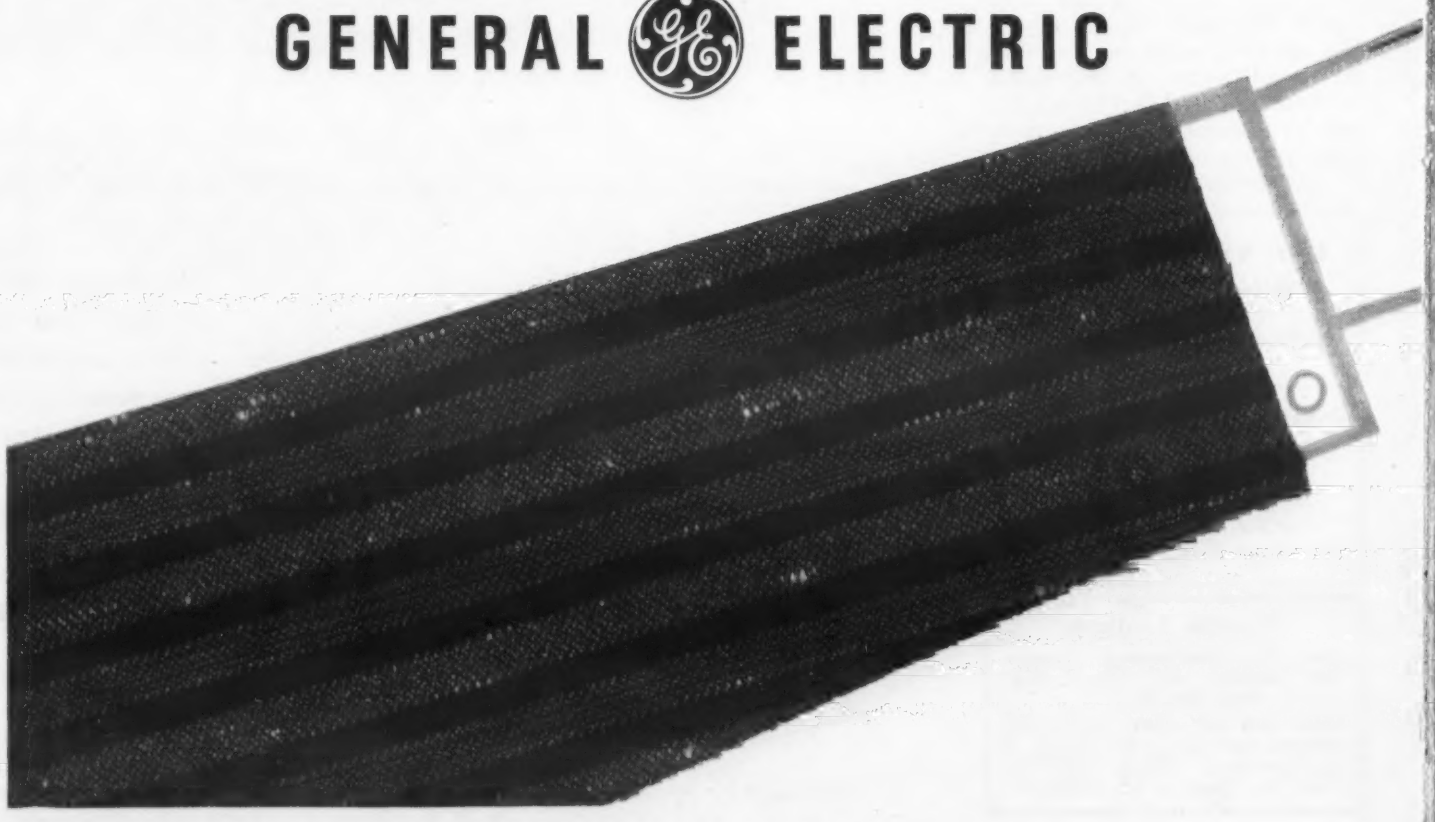
General Electric also announces new 20 and 25 ton "packages". These 3 new models, added to the existing units, give you a line to meet *every* requirement for commercial and industrial air conditioning.

And what a line! Floor-mounted units in 3, 5, 7½, 10, 15, 20, 25 and 30 ton capacities! New air-cooled split systems in 3, 4, 5, 7½ and 10 ton capacities! And self-contained ceiling-mounted units—air-cooled in 3 and 5 ton capacities—water-cooled in 3, 5 and 7½ ton capacities! And there's more to come in 1958!

Get on the bandwagon! Sell General Electric Zone-by-Zone Air Conditioning for more profit in 1958! General Electric will presell prospects for you with powerful advertising, sales promotion and direct mail. See your distributor or mail coupon for complete details.

Progress Is Our Most Important Product

GENERAL ELECTRIC



For more information about products advertised on this page use Information Center, page 22.

No More Legislative Swivets

To Air Condition Missouri Lawmakers By 175-Ton Job—But One House Only

JEFFERSON CITY, Mo.—Air Refrigeration Corp., Kansas City, has been awarded a contract for air conditioning the House side of the Missouri state capitol here.

Rep. Harry Smith, chairman of the House purchasing and supplies committee, said the Kansas City firm was low bidder at $1,000 for installation of each cooling ton. The job is rated at 175 tons. Other bids ranged up to $1,101 per ton.

Work on the air conditioning job was started Sept. 3, with completion scheduled within 90 days.

According to specifications drawn up by the engineers, the work is to consist of all material, labor, equipment, and services necessary to provide a complete air conditioning system for the House chamber, House lounge, and adjacent offices. Console models are to be used for the individual offices.

Basically, specifications call for a refrigeration compressor-condenser unit, an air handling unit, a cooling tower and pump, and return air fans.

Compressor specifications call for a reciprocating type driven by an electric motor by means of a flexible coupling and suitable for operation using Refrigerant-12. Each unit is to be equipped with an integral cylinder unloading system of capacity control arranged for operation at 100%, 75%, 50%, and 25% of rated capacity.

Zoning Board Rules Pittsburgher Can Keep Conditioner

PITTSBURGH — Although a next-door neighbor complained that "the 3-ton compressor with a householder's air conditioner makes too much noise," the local zoning board voted permission to keep the unit in operation.

Attorney W. Fred Mercer lives adjacent to Dr. Zelda Ziskind in Point Breeze. He claimed conditions are "intolerable" since the doctor put in air conditioning. He handed the Zoning Board of Adjustment a charge that neigborhood children couldn't sleep with the "noisy" machine going.

One witness in the case claimed the board had no jurisdiction over the complaint anyway.

Air Moving Group Names M.F.Allen To Head Staff, Operate Program

DETROIT—Marshall F. Allen has been appointed executive vice president of the Air Moving & Conditioning Association, Inc. (AMCA).

M. F. Allen

He succeeds L. O. Monroe, former administrative head of the 58-member company trade assosiation, who will retire.

For the past several years, Allen has been manager of the Magnesia Insulation Manufacturers Association, Washington, D. C. Prior to that, he was secretary and staff engineer of the National Aircraft Standards Committee, sponsored by the U. S. Aeronautics Chamber of Commerce, according to the association.

As head staff member of AMCA, he is responsible for administrative planning, direction, and operation of the association program, it was further pointed out.

Educated at the College of William & Mary and Johns Hopkins university, Allen holds a degree in aeronautical engineering. From 1941-45, Allen served on many special assignments for the government, including work with the Royal Air Force Delegation in Washington; Commonwealth of Australia War Supplies Procurement; and the National Advisory Committee for Aeronautics, the group added.

'Makes Officials Sweat'

Recommend Cooling N. C. County Courthouse

WINTON, N. C.— According to Superior Court Judge W. H. S. Burgwyn, the resplendent new Hartford County Courthouse in this historic old town is to be commended for its beauty and style, but its planners overlooked an item that is "making officials sweat," he stated.

Judge Burgwyn told the grand jury that the "lack of air conditioning causes everyone's temper to be frayed, including the judge's."

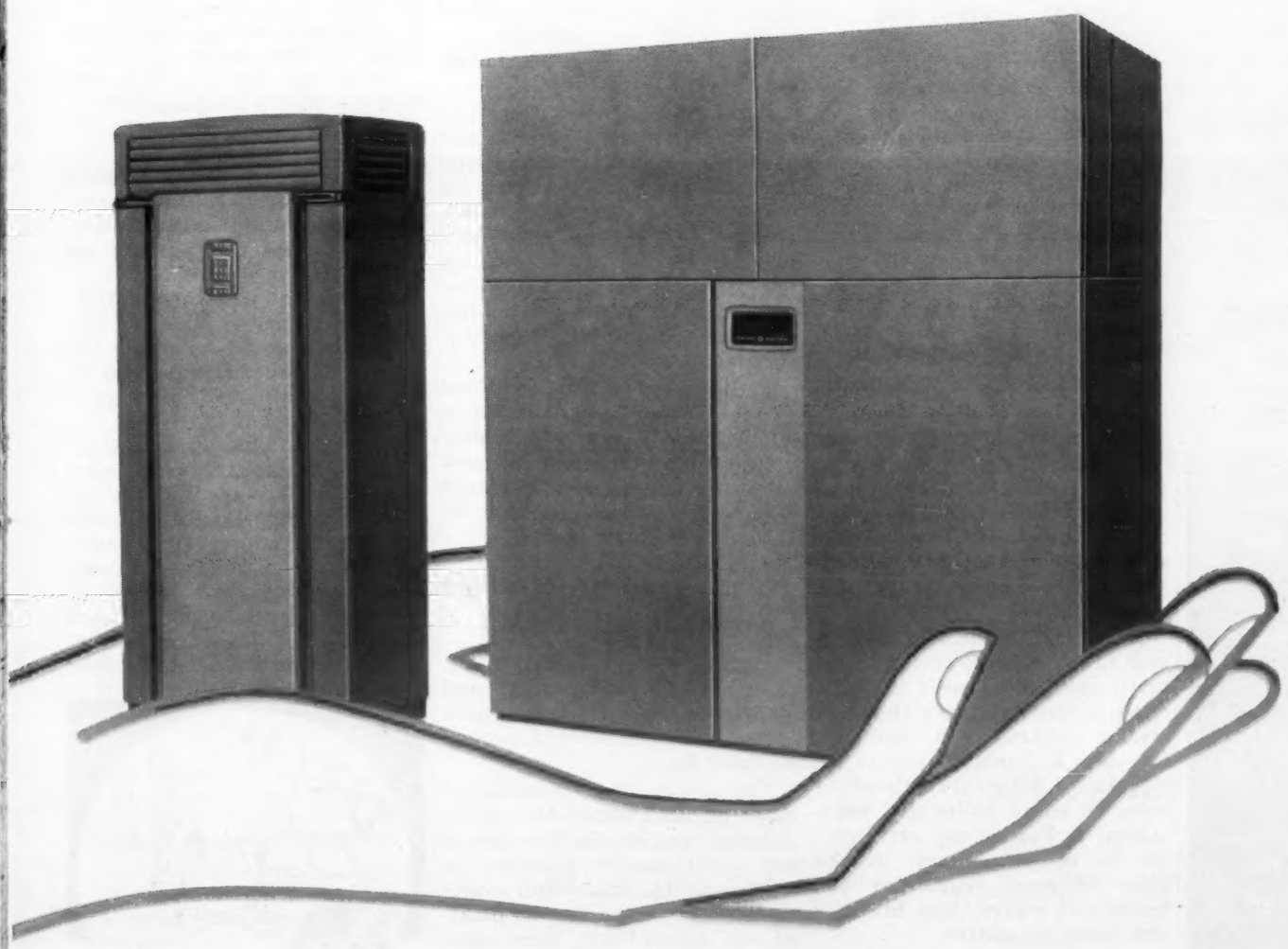
The grand jury immediately recommended installation of air conditioning equipment, it was announced.

Distributor's Conditioning Sales Dip In Nashville Area

NASHVILLE, Tenn.—A drop of 3% in distributor sales of centralized and packaged air conditioners and 19% in room air conditioner sales in the Nashville area for the year ending Aug. 31 was reported recently by the Nashville Electric Service.

During the 12 months period, distributors of 31 brands of air conditioners sold 12,910 room units and 1,015 centralized and packaged units in Nashville and Davidson county. These figures compared with 16,002 room air conditioners and 1,041 centralized and packaged units for the 1955-56 year, it was pointed out.

PACKAGES 30 TONS OF NEATLY AS 3 TONS



Commercial and Industrial Air Conditioning

Mr. R. D. Roley
General Electric Company, Dept. A-8
Commercial and Industrial Air Conditioning
5 Lawrence St., Bloomfield, N. J.

I'm interested in doing business with General Electric in 1958. Please give me complete details.

Name_____

Firm Name_____

Address_____

City_____ Zone___ State_____

E-Z-SEE

SPRING COMPENSATED!

LIQUID INDICATORS

E-Z-SEE Liquid Indicators with spring-compensated gaskets are positively leak-proof —proved by hundreds of thousands now in use. Suitable for Freon-12 and Freon-22 to pressures of 500 psi.

AVAILABLE TO THE TRADE THRU WHOLESALERS EVERYWHERE

REMCO INC.
ZELIENOPLE, PA.

Color Styling of Commercial Refrigerators Proving Worth as Food Store Sales Builder

ATLANTA — "Just as color contributes so importantly to selling non-perishable food in packages, just as color is the key to capturing attention on a billboard or on a roadside sign, so does right color styling stimulate just as compellingly the sale of perishables from food-merchandising refrigerator equipment."

That's a principal reason for the great increase in the purchase of commercial refrigerators that are finished in a color, say officials of the Warren Co. here, manufacturer of commercial refrigerators.

Offers Complete Styling Program

One of the first companies to offer color equipment, Warren now is offering a complete "Coloramics" styling program, and engaged the services of Louis Cheskin, a color research authority.

The "Coloramics" program is developed from the idea that the entire color package (walls, ceiling, floor, and the actual colors the store owner selects for the display cases) should be correct and in harmony to accomplish the maximum results.

" 'Coloramics' colors and the wall shades recommended for them are generally high preference colors, and they produce a pleasant mood; white does not produce a pleasant mood," declared the Warren officials. "White reflects much light which is irritating to the eyes.

"Scientifically selected shades of colors can produce favorable effects and specific effects of warmth or coolness, while it has been demonstrated that white is associated subconsciously with purity, sterility, and coldness."

TWO-TONE "COLORAMICS" in Ice Blue and Peach add distinction to this Warren Refrigerator Co. multi-case lineup in one of the Paul Simpson Food Town stores in Atlanta. Produce and frozen foods department fit nicely together with only a mutual end separating them, although one features a two-shelf merchandising canopy, and the other a mirror. Harmonious wall decoration and flooring complete the color story.

Each of Warren's colors is designed to produce a specific characteristic, psychological effect which can be intensified by using a related color on the wall (a dusty-coral wall for a peach refrigerator), or it can be balanced with a complementary wall color (a violet-gray wall for a Sunlight Yellow refrigerator).

Makes Product Appealing

Some of the "Coloramics" shades were chosen because studies have indicated that they have strong appeal to people generally, and favorable association with food. The other colors were chosen because they are complementary to the products and thus make the product more appealing.

For example, Mint Green is said to be an ideal (complementary) color for a meat case, because it tends to make the meat fresher looking and more attractive. A Sunlight Yellow refrigerated fixture is related in color to many fruits and vegetables. A Pearl Gray refrigerator is complementary to the color of most vegetables and fruits and makes them brighter and more attractive.

Cited as a good example of the use of a planned color scheme for a market is the Rhodes Super Market in St. Marys, Ohio, now operated by Marsh Foodliners, Inc. C. L. Rhodes, who was operating the store when the installation was made, said that "we decided on equipment in color because of the trend to more and more color in the home. It's time we all realized how color conscious the American woman is. The relaxing atmosphere of color has been a big factor in our increase in impulse buying."

Solid color is used on all of the 250 ft. of Warren display cases. Produce merchandisers are in Pearl Gray; dairy and meat departments in Mint Green. Frozen meats, ice cream, and general frozen foods, as well as the merchandising front walk-in, are in Ice Blue.

Colors Produce Action-Getting Unit

The 85 ft. of wall shelving and 276 ft. of gondolas are in Pearl Gray, and the double-belt checkouts are in Hammertone Green. Walls and floor colors were carefully chosen to produce an action-getting package.

A market which carries the color scheme outside as well as in is Nick's Pure Food Market in Providence, R. I. All refrigerated displays are in colored cases; even the exterior the building is a deep green baked onto steel.

After his expansion from 720 sq. ft. to his new color-styled 3,000-ft. market, Proprietor Nicholas De Ruosi reported an over-all 200% increase in dollar volume. He says his customers like it because "it is soothing and relaxing . . . it's obvious people enjoy their marketing much more in these pleasanter surroundings."

Paul Simpson, whose Food Town Stores in Atlanta now number five, selected "Coloramics" colors for his three newest stores, and reports increased volume and pleased customer reaction in the new stores.

Yates-American Machine Consolidates Branches

BELOIT, Wis.—Consolidation of the High Point, N. C. and Memphis branch offices has been announced by Yates-American Machine Co.

The new southern branch, located at 532 Plaster Ave., N.E., Atlanta, was chosen because of its advantageous position in serving south central and southeastern customers, it was pointed out. In addition, more complete stocks of repair parts and supplies can be maintained at the new location, the company said.

Frozen Food Counter Extends Along Store's Entire 96-Ft. Sidewall

CINCINNATI — Extending along one entire sidewall at Albers supermarket at Brentwood Plaza is a 96-ft. counter of frozen foods. It is said to be filled with enough frozen foods to stock a dozen stores of normal size.

This newest of the Albers supermarkets has nothing "normal" about it, is the claim. It is 120 ft. wide and 165 ft. long, totaling 19,800 sq. ft. There are eight checkout lanes and aisles are widely spaced to prevent traffic jams.

Various meat cuts are automatically packaged and weighed on a special scale of split-ounce accuracy. These operations are conducted in full view of patrons.

Several tons of meat are stored in a 35 by 20-ft. walk-in cooler, and in addition there is a large "zero room" to keep foods frozen, it was reported. Employes have special rest rooms with couches, chairs, and tables upstairs.

14,037-Cu. Ft. of Refrigeration Highlights New Chain Market

COLUMBUS, Ohio—Albers recently opened its 19th store in the area containing 14,037 cu. ft. of modern refrigeration store room, the firm announced.

There are 124 ft. of frozen food cases for a complete variety of fancy frozen foods, fruits, vegetables, juices, meats, and seafoods in the new store's 16,874 sq. ft. of sales area. There is an additional 6,726 sq. ft. of storage and preparation area in the structure.

A large pre-packaged, refrigerated self-service meat department stretches 92 ft. across the store, plus an additional 16 ft. for frozen fish and poultry storage, the company stated.

Fresh meats are automatically weighed, wrapped in cellophane, priced, and displayed. There are 44 ft. of refrigerated self-service fresh fruit and vegetable cases. A wide variety of fancy cheeses and dairy foods are located in the 46-ft. dairy section, it was pointed out. This section features four-deck open-top cases.

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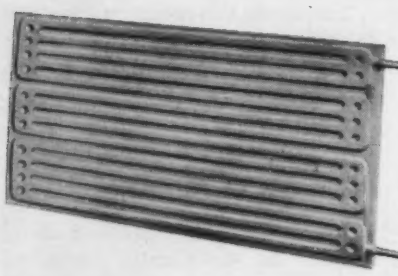

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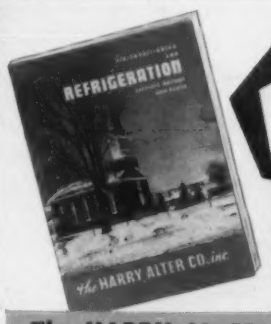

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For more information about products advertised on this page use Information Center, page 22.

Preview

New Products for Commercial Uses To Be Introduced at Chicago Show

On this and other pages in this issue of the NEWS is presented a "preview" of the exhibits of *commercial refrigeration equipment* scheduled for the 10th Air Conditioning and Refrigeration Exposition, thus affording readers the opportunity of spotting various displays in which they may find particular interest. Previews of *air conditioning equipment* will appear in next week's issue, Nov. 4, and *parts and supplies* last of the series, in the Nov. 11 issue of the NEWS.

Can See Water Coolers

New "Hot 'N Cold" beverage center and "Oasis" In-A-Wall water cooler are headline attractions in booth 771 where the Ebco Mfg. Co. will hold court. They will be seen on a background of Oasis Constellation series electric water coolers.

Wall Refrigerator Set

Silver Refrigeration Mfg. Corp. promises show visitors who drop into booth 138 a new wall display refrigerator, refrigerated baker's table, and a new 27-cu. ft. reach-in for their inspection.

Offers Defrost Units

New automatic defrost for mullion unit tops the new products Tenney Engineering, Inc. will exhibit in booths 619-620. Also of special interest will be an automatic defrost walk-in cooler, air conditioning coils, and a new line of unit coolers.

Tenney will display, in addition, fin coils, unit coolers, ice cube makers, and working demonstrations of expansion valves and defrost and coil and pan combinations.

To Spotlight Freezers

New 1958 model home freezers built entirely of aluminum will grab the spotlight at the Sub Zero Freezer Co., Inc. exhibit.

Booth 228 will also feature an entire new line of built-in refrigerators and freezers.

Leads Condensing Units

Air and water-cooled condensing units mounted singly and in multiple on a variety of stands will highlight the Tyler Refrigeration Corp. display in booths 256 and 318.

Wilson bulk milk coolers and a beverage vendor plus dairy and meat display cases will fill out the Tyler exhibit.

Features 'Cold Plates'

Dean Cold Plate Div., Dean Products, Inc. will feature its "Cold Plate," "Econotank," and "Snow Plate" in booth 308.

To Highlight 2 Items

C. Schmidt Co. will highlight two items in booth 224 at the exposition. One will be a walk-in cooler of all-steel sectional construction with non-skid steel floor flush with the door.

Second featured unit will be 7-ft. triple-deck self-contained refrigerated shelving "just coming out of the test room." It is designed for smaller stores and for use as end displays.

Defrost Controls Due

Refrigeration engineers will get a first look at new controls for commercial defrosting when Tork Time Controls, Inc. unveils its latest units in booth 651.

Three new time switches for commercial defrosting that engineers will be able to examine and test are:

1. Time initiated, pressure terminated (with built-in bellows).
2. Dual dial (with fan delay—"finer selectivity and more versatile switching than offered on earlier models."
3. Combination of the two—claimed to be a time switch "first."

An important feature on the time-pressure units, Tork points out, is a new, improved "Fail-Safe" setting to insure cooling in the event that the thermostat or pressure switch fails to revert back from defrost.

Tork will also display its complete line of commercial defrosting time switches for ambient defrost, hot gas, reverse cycle, electric heat, and water spray defrosting. Units for controlling air conditioners include portable and installed plain dial and skip-a-day dial models.

To See Special Items

Two combination refrigerator freezers, a "Spacesaver" reach-in refrigerator, and an upright freezer with automatic defrost are items of special interest scheduled to appear in Jordon Commercial Refrigerator Co.'s booth 529.

In addition to these headliners will appear two reach-ins with "Jord-O-Matic" food conditioning system, two upright freezers, a 21-cu. ft. combination refrigerator-freezer, and a bottled beverage cooler.

They Won't Say What

Only the people at Koch Refrigerators, Inc. know what new item or items will be displayed in booth 144 beside the Series M reach-in refrigerator. And they aren't talking.

Flakers To Lure Eyes

Flake- type ice making equipment under the name "Instant Ice Machine" will lure visitors to booths 761 and 762, occupied by Liquid Freeze Corp.

To Introduce Cases

New line of 12-ft. long self-service display cases will be introduced by McCray Refrigerator Co., Inc. in booths 305-306. They include a low produce case, a triple-deck dairy case, a frozen food case, and a meat case. Also included will be a self-contained island display case.

Water Towers Shown

Spotlighted in booths 230 and 231 of Binks Mfg. Co. will be the new "Watertemp" cooling tower line which will feature gravity distribution and counter current operation—air up and water down.

Air propulsion equipment will be situated atop the tower, operating on induced draft, the company said.

The entire cooling tower will be constructed of steel hot dip galvanized after fabrication, and there will be no paint or coating material used, it was pointed out. The towers will be offered in approximately 10 frame sizes ranging in capacity from 5 to 60 tons.

Attractions Promised

Commercial-type reach-in refrigerators and freezers featuring interchangeable interior accessories are attractions promised for booth 141 by Victory Metal Mfg. Corp.

Compressor Racks Set

Weber Showcase & Fixture Co., Inc. will exhibit new compressor racks and a self-contained low temperature display case in booth 247.

Will View Bulk Tank

New 375-gal. factory sealed bulk farm cooling tank with patented hermetically sealed refrigeration system gets top spot in the Creamery Package Mfg. Co. booth 513.

Another new item will be a 100-gal. factory-sealed bulk milk farm cooling tank.

Creamery Package will also show a stainless steel centrifugal pump mounted on a portable "Pump 'N Caddie" and a "VS" ammonia compressor.

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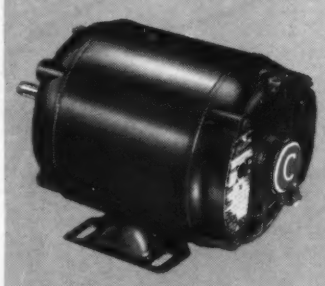

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Preview

Show Spotlight To Shine on Much New Commercial Refrigeration Equipment

To Focus on 4 Cases

Four "Flexicold" model display cases—island units 5 and 8 ft. in length and wall-type fixtures of the same length—will highlight Sherer-Gillett Co.'s display in booth 237.

Located waist-high on the refrigerator is a dial with plug-in covering button which can be turned by screwdriver to raise or lower temperature of the case from -10° to 44° F., the firm noted. This permits alternating use of case between low temperature and normal temperature display.

Also available will be literature describing the remaining models in the Sherer line.

To Push Merchandiser

"Master Merchandiser" model M-8 for open display of packaged fresh meats will be leading exhibit in Warren Co., Inc.'s booth 555. It features "Thermopane" display guard, is offered in 8 and 12-ft. models.

Another item to be featured is frozen food Master Merchandiser XL-8-C2M which has a no-glass front and superstructure with two adjustable shelves. Acid-resistant "Coloramics" mint green band extends across porcelain front of case.

Offers Tower Line

Booth 161 will be the scene of a complete-line cooling tower display by TOT Towers, Inc. Units will range in sizes from 2 through 125 tons.

Both natural and mechanical draft types with casings made of galvanized steel, wood, and asbestos cement will be featured, the company stated.

To Show All Cabinets

Coldin Cabinet Co., Inc. will offer "every conceivable" type of refrigerated display cabinet in booths 135 and 239 and show for the first time several advance styled cabinets.

New model FT6AD, a slant-type low temperature display and storage case with automatic defrost will be highlighted, the company said. Many combinations of trim and decor will be featured, including matching, contrasting, porcelain, baked enamel, stainless steel, and synthetics in a wide variety of colors, it was explained.

To View 5 New Items

Focal point of booth 530 will be Fogel Refrigerator Co.'s display introducing five new items, the firm announced.

Model AV-7, automatic defrost counter-top angle-vision ice cream and frozen food merchandiser will be one feature. DE-8-SC, new style wall display case with sliding glass doors set in stainless steel frames, will be another, it was said. Third feature will be model DCO-6, redesigned model of Fogel's open three-shelf self-service dairy case with continuous ends.

Model OV-8-SC, adapted from the "Vegmart" case, has a new refrigeration system to permit two-temperature control. In addition, model 85-DD display case providing for merchandising of salads and appetizers will be headlined.

To See Beverage Case

Peerless Equipment Corp. will center attention in booth 150-51 on its sliding glass door refrigerated beverage display case.

Also exhibited will be the firm's new "Gourmet" display case and pass-through back door, styled and designed to achieve maximum visibility and adaptability, it was pointed out.

Headlines Ice Maker

Henry Vogt Machine Co. will highlight a 2,000-lb. capacity automatic tube-ice machine in booth 754. Producing cylinder or crushed ice, the unit has 650-lb. capacity storage bin with a partition to separate the two types of ice.

Two hinged access doors are provided in the storage bin, the company said, with an upper "scoop out" for smaller quantities, a lower "shovel out" door for larger quantities. Freezer and condenser tubes and refrigerant piping are copper and brass fabricated, it was added.

Features Dispensers

Carbonic Dispenser, Inc.'s exhibit will feature floor models "Imperial" and "Deluxe Sodamaster" dispensers in booth 212, the firm said.

In addition, counter model Sodamaster "Baronet" dispenser and R-35 remote unit as well as a "Magic Jet" carbonator will be highlighted.

Spotlights Walk-In

New equipment of special interest in booths 667 and 709 will include a combination walk-in cooler, an all-steel section box with low temperature compartment, Bally Case & Cooler Co. announced.

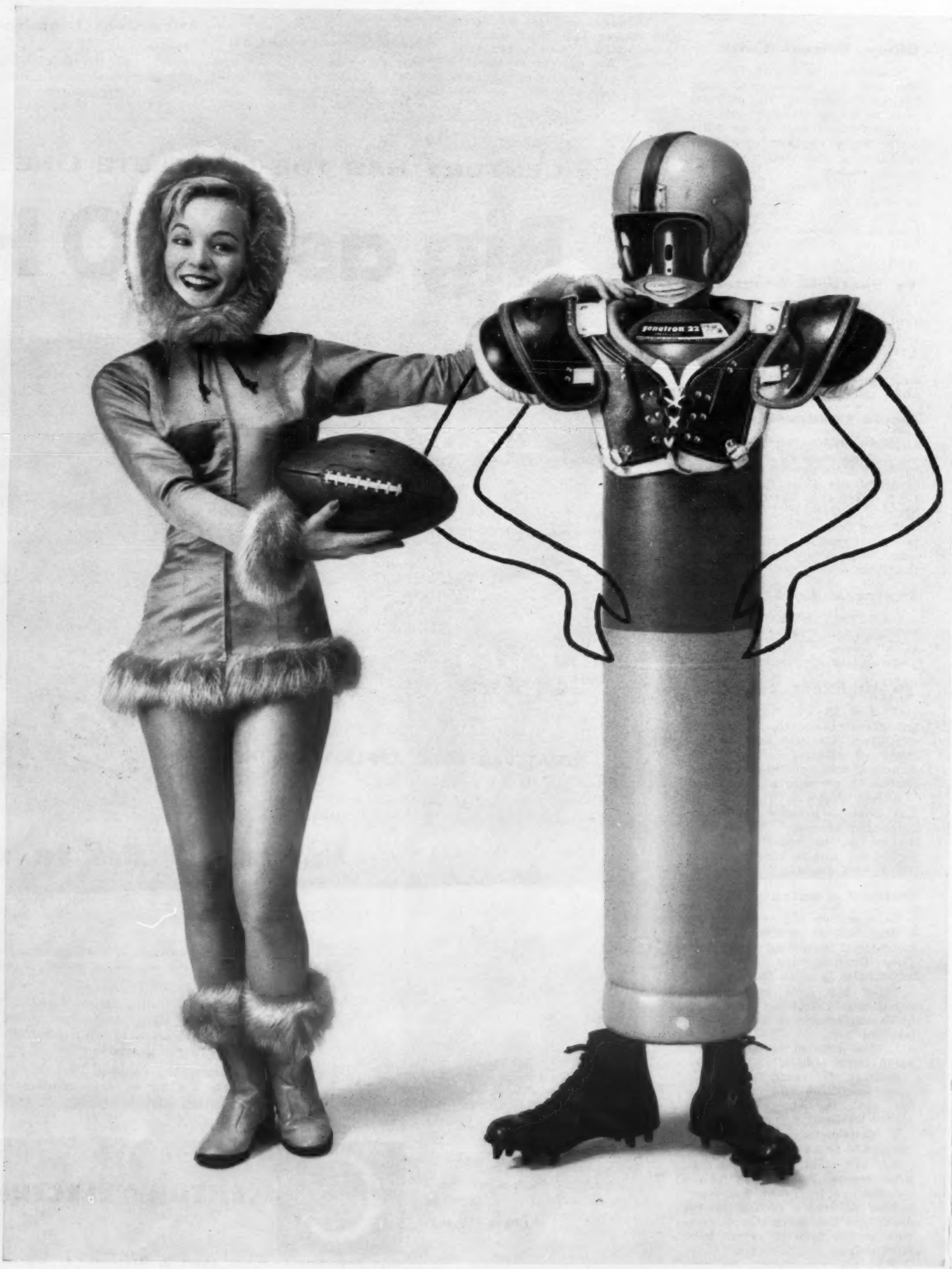
Also featured will be 1958 Bally angle freezer, an automatic defrost self-contained ice cream freezer employing color dynamics, "Low-Temp" model display case for both ice cream and frozen foods will be displayed too.

Other items to be exhibited: TI-30 and TI-43 ice cream display cases; adjustable shelf candy case; "Coldisplay," small meat, delicatessen, and dairy product case; wall display case; double-duty case; and "Servicold 60" self-contained open display case, the company added.

To Display Dispenser

Custom Dispenser, Inc. will display in booth 726 both a two and three-flavor self-contained floor model soft drink dispenser.

In addition, model C-5 non-refrigerated remote-type dispenser will be featured, the firm announced.



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For more information about products advertised on this page use Information Center, page 22.

Will Introduce Tower

Acme Industries, Inc. will introduce a "Flow-Cold" cooling tower with blower fan section for ductwork installations in booth 418-20. It will supplement the present line with propeller fan sections.

Representative models of three packaged liquid chiller lines will also be featured. The lines include both an air-cooled and a water-cooled "Flow-Pac" packaged chiller, 1¾ through 5 tons; a "Flow-Cold" packaged liquid chiller, 3 through 20 tons; and "Flow-Therm" packaged chiller, 20 through 125 tons.

Also exhibited will be models from two cooling tower lines—Flow-Cold in capacity 3 through 20 tons for residential and small commercial installations, and "Flow-Mizer," 20 through 100 tons, for commercial and industrial uses.

Exhibit background will spotlight a three-dimensional replica of Acme's new 120,000-sq. ft. manufacturing facilities, it was stated, along with 12 lighted translites showing various in-plant production methods and techniques.

To Spotlight Walk-In

A representative group of its full line of beverage coolers will be headlined items in Ideal Cooler Corp.'s booth 170, the firm announced.

However, outstanding item will be a sectional metal walk-in cooler designed to cut high freight and labor costs, it was explained. Available in 6, 8, and 10-ft. widths, the unit has two standard heights, 6½ and 7½ ft.

Will Feature Models

Operating models of mechanical truck refrigeration systems will be a feature of Kold-Hold Div., Tranter Mfg., Inc.'s display in booth 407, it was announced.

Exhibit will include Kold-Hold "Mark," "Crown," and "Lance" systems operable with plate-type evaporators or blowers to hold any specified temperature in properly insulated bodies for transportation of perishables.

Also exhibited will be a cutaway Kold-Hold truck plate, a plate stand, and a "Platecoil" heat transfer unit that can be used in refrigeration. A four-panel background will tell the story of Tranter, showing low sides, a cutaway illustration of a truck plate, and the Lance system.

Preview

Manufacturers Will Center Attention On Initial Showing of 1958 Models

Condenser To Be Seen

An air-cooled condenser rigged for all-weather operation will be spotlighted in Halstead & Mitchell's booth 335.

Condenser and "Limitrol" valve will be hooked up with a compressor and evaporator, the company indicated. Limitrol valve is placed in the liquid line between receiver and condenser to assure peak performance under all ambient conditions by automatically maintaining balance between compressor and condenser, it was explained.

Also shown in the H&M display booth will be a typical water cooling tower featuring the firm's 20-year guarantee on the wetted deck against rotting and fungus attack.

Cooler To Be Eyed

Midwest Mfg. Co. will exhibit its "Chill" walk-in cooler as central feature in its booth (219). The unit highlights "lockseam" panel assembly.

Chill unitized package refrigeration systems can be put in any walk-in cooler, the company said.

BAC Has New Units

Baltimore Aircoil Co., Inc. will feature in spaces 648-49-50 a new propeller fan line of evaporative condensers and cooling towers for applications where minimum horsepower is essential, the company said.

In addition to saving horsepower, these units also have the fans located in the dry entering air, resulting in longer life and lower maintenance costs, according to the firm.

Other items to be displayed include centrifugal fan evaporative condensers and cooling towers in both blow-through and draw-through styles, it was added.

To Offer '58 Lines

Kelvinator Div., American Motors Corp. will focus attention on representative models of its ice cream cabinet line, beverage coolers, room air conditioners, air dryers, water coolers, and reserve storage cabinet for frozen foods and ice cream in booth 453.

The recently expanded line of hermetically sealed condensing units will also be represented in the space, along with models from the open-type condensing unit line. In addition, the firm will display special compressor models with cutaway views at the Hotel Sherman.

To View 'Uni-Pak' Unit

Master-Bilt Refrigeration Mfg. Co. will display a cooling tower and new "Uni-Pak" refrigeration system in booth 729.

The Uni-Pak is a plug-in refrigeration unit for insulated walk-in egg cooling rooms. It is designed to provide temperatures of 35°-37° F., and includes such features as frost-free evaporator coil, air-cooled condenser, permanently lubricated motor, and pressure control, according to the company. The Uni-Pak is available in models of ½, ¾, and 1 hp. and fits into an opening 21 by 21 in., or 20 by 24 in., depending on the model used.

Master-Bilt cooling towers are available in 10 models, in sizes of 3 through 50 tons. They are of galvanized steel construction, and can be installed outdoors or indoors. Other features include removable redwood decking, quiet fan, and motor pivot-mounted for easy adjustment of belt tension, it was pointed out.

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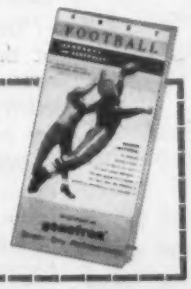

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Automated Selling Pushes Into Commercial Refrigeration

(Concluded from page 1)

and odoriferous "slot machine."

Already this prediction is coming true in factories and offices. Hot-and-cold food vending machines are supplanting in-plant cafeterias, because they can do the job so much cheaper. Sandwiches, hot soups, milk, coffee, and even "TV dinner plates" can be vended successfully by machines. And they save money both for employers and employes in shops which install them.

The high labor costs of trucking *and serving* cafeteria food are growing so alarmingly that food vending machines can pay for themselves rapidly (just like ice-making machines). Same reasoning applies to night-service food stores, hotels, motels, and apartments. Food vending machines are the ultimate in self-service. They're unsalaried salesman who work for customers around the clock—with no holidays, vacations, or fringe benefits. However, all the problems aren't licked.

"Everyone in the vending business will hate me for *saying* this," declares T. J. Ammel of Kelvinator, who is a top authority in the field, "but the biggest problem of food vending is that manufacturers concentrate on the vending mechanism itself, and on getting the greatest quantity of product inside the enclosure.

"When those problems are worked out, they begin to think about refrigeration. You can guess what happens. Some of the systems get to looking like Rube Goldberg designs. And the cabinets—have you ever had to fight someone to get the door insulation from 1 in. to something better (it should have been 2-in. minimum)?"

In many vending machines there are so many openings that the cabinets look as if they had been sprayed by a machine gun. Manufacturers, Mr. Ammel believes, should reduce openings to a minimum—or try to put in baffles, covers, doors, etc., to minimize the air leakage.

Cabinets may be subjected to temperatures ranging from 140° F. to below freezing. How can the latter happen? Example: one large manufacturer built a cartoned milk vending machine (originally designed for indoor sales) and put it into outdoor use. Result: a heater coil had to be placed alongside the cooling unit, and controlled to keep the milk from freezing when outdoor temperatures dropped! Also, the control had to be moved to the inside of the cabinet, so that it would function when the outdoor temperature hung around 38° F.

Of course, almost every product has its own temperature range. Bottled drinks must be held from 30° F. (with mush ice for the down south afficiandos) to a maximum of 40° F. Cup drinks may run from 34° to 44° F. Milk must be kept from 36° to 50° F. Ice cream (same as in an ice cream cabinet) needs a low range of zero and a high of 10° F. This refrigerating job isn't quite as tough as that faced by ice cream cabinets, because vended products usually don't have high butterfat content.

Humidity is not a problem when you are vending soft drinks or cartoned milk. But when one vends foods such as sandwiches and salads there appears the problem of keeping humidity high enough to prevent dehydration, yet low enough to prevent mold. Designing for peak loads rarely is a problem for milk or sandwiches, but it is quite tricky on some other items. For example: bottled or canned drink vendors are designed to operate in very high ambients. And then someone stuffs a load of high temperature products into the vendor!

Cup machines, particularly the pre-mix type which use variations of the instantaneous type cooler, can be slugged with a hot product load, too. Obviously, designs should combat such user misuse.

Of course, all vending machines should provide plenty of room for the condensing unit, and they should assure free flow of air through generous openings. But many aren't. In this connection, vending machine manufacturers like to install a complete refrigerating system which can be purchased as a package, because it can be easily replaced by *their* mechanics. The latter usually know all about vending mechanisms, and practically nothing about refrigeration.

In the fast-growing field of vending machine manufacturing, the Vendo-Vendorlator combine probably is largest in production volume. Amongst refrigerated "automatic salesmen," Vendo makes bottled drink, ice cream, cup pre-mix, milk, food, and coffee vendors in the amount of 100,000 a year.

Tyler Refrigerator Corp.'s subsidiary, Champion Vendor Co., produces bottled drink vending machines. Automatic Canteen has a 40% interest in Rowe Mfg. Co. which produces milk and sandwich vendors. Perhaps the biggest in the pre-mix cup vendor business is Glascock Bros. Mfg. Co. while Apco, Inc. leads the post-mix cup field. Also in the game is Practical Products of Minneapolis (subsidiary of U. S. Hoffman Machinery Co.).

Other prominent vending machine manufacturers include: Atlas Metal Works, Dallas; Cavalier Corp., Chattanooga, Tenn.; Central Tool Co., Inc., Hartford, Conn.; Cole Products Corp., Chicago; Dariomatic, Inc., Los Angeles; Food Engineering Corp., Manchester, N. H.; General Vending Machine Corp., Philadelphia; Fred Hebel Corp., Addison, Ill.; Ideal Dispenser Co., Bloomington, Ill.; Lennox Mfg. Co., Chicago; Lyon Industries, Inc., New York City; Bert Mills Corp., St. Charles, Ill.; Mills Industries, Inc., Detroit; Norris Dispensers, Inc., Minneapolis; Rudd-Melikian, Inc., Hatboro, Pa.; Selectivend Corp., Kansas City, Mo.; Smithco, Inc., Milwaukee; Snively Groves, Inc., Winter Haven, Fla.; Square Mfg. Co., Chicago; Sunroc, Inc., Glen Riddle, Pa.; United Sound & Signal Co., Inc., Columbia, Pa.; Victor Products Corp., Ransom, W. Va.; Westinghouse Electric Corp., Springfield, Mass.; and La Crosse Cooler Co., Las Crosse, Wis.

If we've left out anybody important, please write! We intend to follow up, editorially, this interesting new commercial refrigeration endeavor.

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AIR CONDITIONING & REFRIGERATION NEWS

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'The Conscience of the Industry'

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VOLUME 82, NO. 9, SERIAL NO. 1,492, OCTOBER 28, 1957

NEWS GETS LIKE A 'RAG' IN SAUDIA ARABIA

Mission Support Section
Hqtrs. 2nd Air Division
A.P.O. 616, N. Y.

Editor:

This will acknowledge receipt of back issues of the AIR CONDITIONING & REFRIGERATION NEWS, you so kindly forwarded me here in Saudia Arabia.

When you fellows in the states stop, and think, how little we have here overseas, especially in Saudia Arabia, where our newspapers are a month old, no weekly issue of the AIR CONDITIONING & REFRIGERATION NEWS, to keep us abreast of the industry, you can readily appreciate our enthusiasm, in receiving such important news, and these issues make the rounds of the American personnel until the issues look like rags. That's what we think of AIR CONDITIONING & REFRIGERATION NEWS here. It is one periodical read more than any other I know of.

We all wish (8 US AC men) to thank you for complying with my request for back issues I missed while in Morocco.

In the near future shall give a few of the highlights of life in Saudia Arabia, also just what our mission is, and how little we have to accomplish that mission with—no replacement parts or supplies—then the boys back home will surely appreciate the good old USA, moreso than ever before.

With personal regards and every good wish to your wonderful publication.

ERNEST E. CONDON

Preview

Booth Attendants Will Be Available To Give Demonstrations and Advice

Towers To Be Shown

Current models of Marley "Aquatowers" and "AquaCoolers" will grace booth 267 for the Marley Co.

To See New Coolers

Drinking water coolers of advanced design and with new styling will be feature attractions at booth 504, says Temprite Products Corp.

Beyond these, visitors will find oil separators, instantaneous carbonators, combination cooler carbonators, and instantaneous and storage liquid coolers.

Twin-Head Machine Set

New twin head continuous soft ice cream machine with maximum hourly capacity in a minimum of floor space will draw visitors to booth 722, where Emery Thompson Machine & Supply Co. will also have its regular line of ice cream freezers and hardening cabinets on display.

Beverage Coolers Due

True Mfg. Co., Inc. will display its counter-type beverage coolers in booth 172.

To Limn Attraction

An all stainless steel "Drinkmaster" with plastic top and a beverage cooler with plastic bar top are star attractions United Friguator Engineers will bring to booth 229. Both fixtures are 6 ft. long and 38 in. high.

Dispenser To Lead

"Nothing similar ever previously shown by any exhibitor" is the way United Refrigerator Co. titillatingly describes the new, completely refrigerated home milk dispenser it will show in booths 208-209.

Completely new models of commercial bulk milk dispensers and two new food freezer models are also promised.

Other products to be displayed are a commercial storage food freezer, a two-temperature combination refrigerator-freezer, and an ice cube maker.

Wall Cases Headlined

Self-contained and remote dairy and beverage wall cases will be new in the Ace Cabinet Corp. booths 240 and 334.

Ace will also show examples of its automatic defrost "Count'r-Hi" cabinets, milk and beverage cases, ice cream cabinets, automatic defrost glass front merchandisers, low temperature upright cabinets, and sliding glass display cabinets.

New Ice Makers Due

American Automatic Ice Machine Co. will display new automatic ice making equipment and accessories along with its stainless steel and standard ice makers in booth 503.

To View Special Item

Special attraction at the American Gas Machine Co. booths 747-49 will be the new "Scotsman" automatic ice machine and carbonated drink dispenser designed for steady or peak load traffic.

"Super Cubers" and "Super Flakers" will share the limelight at the Scotsman exhibit.

Circulating Unit Set

New "Air-Cel" circulating unit for use with static plates to provide uniform temperature in any refrigerated truck body will catch the spotlight in Dole Refrigerating Co.'s booth 601.

Sharing attention will be Dole's "Cold-Cel" truck plate, "Truk-Cel" eutectic blower unit, "Ice-Cel" latent heat ice storage system, and "Heat-Cel" low temperature automatic defrost.

To Center Egg Cooler

Erickson Industries, Inc. will center attention in booth 217 on its new egg cooler, "Kwik-View 80" refrigerator, and "Chill-Air" beverage cooler, the company pointed out.

Also present will be the "Chill-Air" metal walk-in cooler, according to the company.

'Everything Is New'

Everything is new in booth 718 where Evans Mfg. Corp. will exhibit dairy wall cases, meat cases, counter high refrigerator display cases, and its beverage display cases.

Cases To Fill Booth

Latest design self-service display cases will fill booths 148-149 with what Federal Refrigerator Mfg. Co. believes will fit every need of the modern food store.

To Display 3 Units

Foster Refrigerator Co. will show its cook's, chef's, or broiler refrigerator and drop front beverage cooler along with an upright two-temperature refrigerator in booth 210.

'Allvue' Cases To Star

New "Allvue" cases and the new "Eye Wide" vision line will fill booth 168 for Frigid Igloo Mfg. Corp. If that confuses you, "watch our display," the company says.

To Eye Drink Dispenser

A new improved "Coldpoint" drink dispenser will take its place among the custom type beverage dispensing systems and component parts exhibited by Bastian-Blessing Co. in booths 765-766.

Other equipment to be displayed includes carbonators, soda fountain unit, and self-contained display case.

Promises Unit Door

New type refrigerator door is promised by Butcher Boy Refrigerator Door Co. for visitors to booth 432.

The company will also spread out its refrigerator door hardware for inspection.

Tower 'To Stop Viewers'

"Tak-a-Part" propeller type cooling towers will stop visitors to booth 616, where the E. D. Goodfellow Co., Inc. will also have something for those interested in centrifugal pumps, the manufacturer claims.

To Show 3 New Items

Howard Refrigerator Co., Inc. will display three new items of special interest in booth 153, it was announced.

They are a combination pre-mix soft drink and ice maker unit, a dairy display merchandiser, and a select flavor bottle vender.

Rack To Be Displayed

C. V. Hill & Co., Inc. will display a new space-saving condensing unit rack in booth 547.

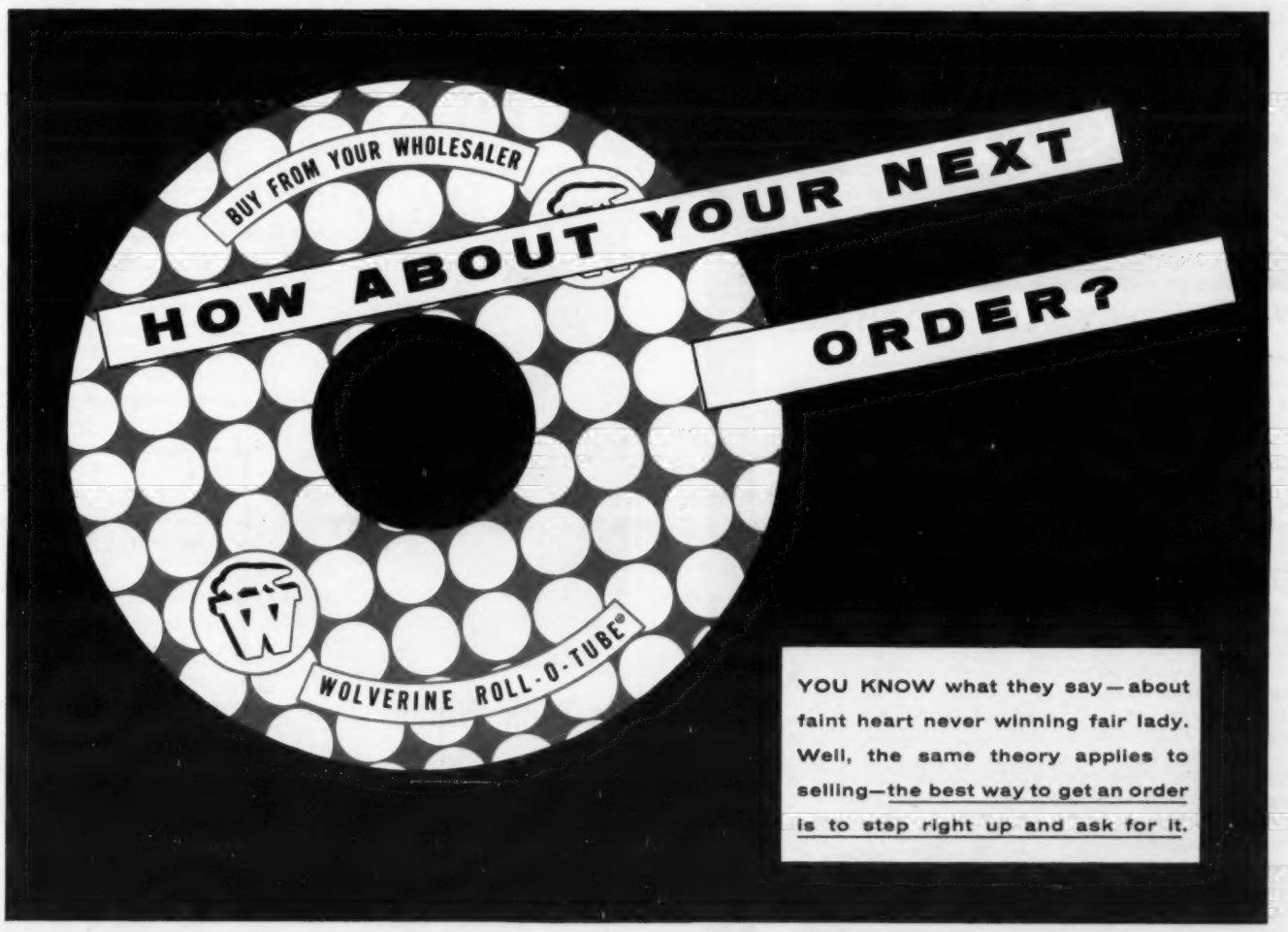
Several Items Set

Highlighting the Howe Ice Machine Co. display in booth 710 will be a 20-ton compressor assembly, a 10-hp. ammonia booster assembly, three-fan rapid freeze unit coolers, a 16-in. dia. intercooler, a shell and tube ammonia condenser, and ammonia "and "Freon" receivers.

To Hold Center Stage

New "Space Saving" designed models of "Hussmetic" condensing units and multiple "K-Frame" assemblies will occupy the center of the stage in the Hussmann Refrigeration, Inc. booth.

A pictorial exhibit of Hussmann's complete line of food store equipment, including refrigerated display cases, walk-in coolers, condensing units, shelving, and "Auto-Flo" checkouts, will form the backdrop of booth 155, according to Hussmann.


BUY FROM YOUR WHOLESALER
HOW ABOUT YOUR NEXT ORDER?
WOLVERINE ROLL-O-TUBE®
YOU KNOW what they say—about faint heart never winning fair lady. Well, the same theory applies to selling—the best way to get an order is to step right up and ask for it.

Here are some of the reasons why we know you'll benefit through ordering tubing made the Tubemanship way by Wolverine Tube

Let's take Wolverine Roll-O-Tube® as an example. You'll like the Roll-O-Tube carton because it is super-thin—permits you to stack more copper tube in a given area . . . because its easy handling speeds up customer service . . . because its color coding and easy-to-read print makes stock taking easy . . . and because every carton tells the user to BUY FROM YOUR WHOLESALER.

Your customers will like Roll-O-Tube because they can roll it like a hoop . . . carry it by its convenient center hole . . . use it as a work-saving reel . . . leave unused tube in the carton where it is protected against damage and dirt. In addition to Roll-O-Tube, Wolverine also manufactures rigidly quality-controlled straight length copper tubing, S.P.S. pipe in red brass and copper, and copper D.W.V. (drainage, waste, vent) tube—all in a wide range of sizes.

We'll see that your order gets fast, efficient service. Place it with Wolverine today!

Ask, too, for your copy of "Wolverine Tube Is Easy To Sell."

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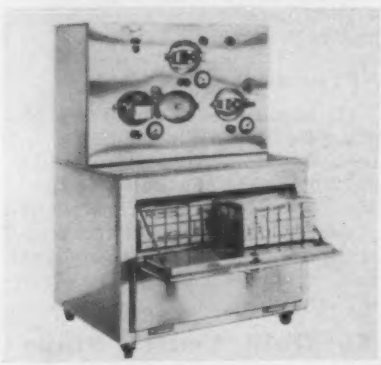
For more information about products advertised on this page use Information Center, page 22.

Vischer To Introduce Cooker-Freezer Line



—KEY NO. G-1040—

CHICAGO—A new concept in food service equipment will be introduced in November by Vischer Products Co. when cooker-freezers are added to the line of "Flex-Seal" speed cookers, it was stated.

Model 300F has three cooking compartments with a freezer base, for direct steam operation. Model 350F has its own electric steam generator. Model 500F has five cooking compartments with a freezer base, for direct steam operation. Model 550F has its own self-generating steam supply.

The three compartment models will store approximately 120 institutional size packages; the five compartment models, approximately 180.

Individual cooking compartments are independently operated. Every compartment has its own pressure gauge and timer, direct-to-drain self-cleaning valve, one 3½-qt. size stainless steel pan, and uses 12 to 15 packages per hour.

Belt Claimed To Reduce Stretch To Minimum

—KEY NO. G-1041—

AKRON, Ohio — Belt stretch is claimed to be reduced to a minimum in a belt offered by B. F. Goodrich Industrial Products Co.

Length uniformity in the new belt, designed for use on all type drives, is maintained by controlling the amount of moisture in the air during manufacture.

you want 'em? we got 'em!

28 FULL LINES!

d-h AIR CONDITIONING

SPOTAIRE ROOM-by-ROOM AIR CONDITIONERS: **#1** d-h LRC's: basic unit, concealed or deluxe cabinet; 4 models, 200 thru 600 cfm. **#2** d-h VRC's: concealed or deluxe consoles; 3 models. 200 thru 600 cfm. **#3** d-h HRC's: 3 suspended types, 19 models, 300 thru 1750 cfm.

AIR HANDLING UNITS: **#4** d-h HH Series: ceiling suspended. **#5** d-h HHV Series: floor mounted. Both: 14 models, 624 thru 28000 cfm.

VENTILATING UNITS: **#6** d-h AM: 1752 thru 32250 cfm.

MULTIZONE TYPES: **#7** d-h FLEXAZONE: for simultaneous, independent, variable heating, cooling, ventilating; 1752 thru 32250 cfm.

PACKAGED AIR CONDITIONERS: **#8** d-h AECR: with built-in evaporative condenser. **#9** d-h SCR: with water-cooled condenser. Both, 7½ thru 75 H.P.

PACKAGED STORE COOLERS: **#10** d-h DYNA-PAC & ROYALAIRE: 2 thru 15 tons.

PACKAGED WATER CHILLERS: **#11** d-h CWG: 7½ thru 75 H.P. **#12** d-h CWG-E: attached evaporative condenser. Both 7½ thru 75 H.P.

EVAPORATIVE CONDENSERS: **#13** d-h PERMA-FAN: 13 models; 5 thru 110 tons.

COILS: **#14** Extended surface; steam, water, DX **#15** Type "H"; small applications, DX or chilled water.

PACKAGED WATER CHILLERS: **#16** d-h AC; air cooled. **#17** d-h WC: water cooled. Both, 2, 3, 5 H.P.

COOLING TOWERS: **#18** d-h WMT: 13 models, 5 thru 100 tons.

AIR-COOLED CONDENSERS: **#19** d-h ACC: 5 models, 2 thru 20 tons.

d-h COMMERCIAL REFRIGERATION:

UNIT COOLERS: **#20** d-h FLOCOLD UNIT COOLERS: over 34° F; 11 models; 750 thru 6000 cfm. **#21** d-h FLOCOLD: under 34°F, water defrost, 7 models, 750 thru 6000 cfm. **#22** d-h FLOCOLD: over and under 34° F; water defrost ammonia, 4 models, 2000 thru 6000 cfm. **#23** d-h SPASAVER; WALK-IN BOXES: over 34° F, 7 models, 730 thru 4400 cfm. **#24** d-h HOT SHOT; AUTOMATIC ELECTRIC DEFROST: under 34° F, 6 models, 700 thru 3700 cfm. **#25** d-h HRC; MEAT CUTTING & PACKAGING ROOM UNITS: 14 models, 500 thru 1750 cfm. **#26** d-h FLOCOLD HOT PAN; LIQUOR/MEAT WALK-IN: 8 models, 750 thru 6000 cfm.

PRODUCT COOLERS: **#27** d-h FLOCOLD (FT & CT; FTWD & CTWD; FTAF & CTAF): 9 models; 1314 to 37325 cfm.

REPLACEMENT HOUSING: **#28** d-h SPASAVER: kit to modernize on-job unit coolers

Want literature? Request by number: **#1** *thru* **#28**_____

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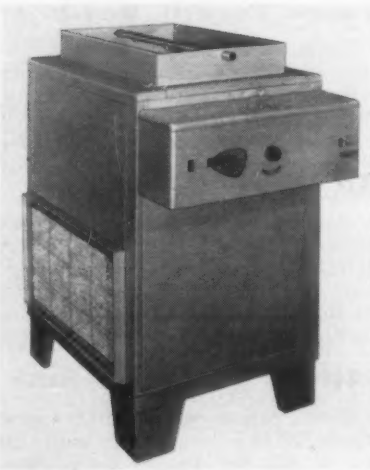


Offers Electronic Air Cleaner Line

—KEY NO. G-1042—

PITTSBURGH — Electro-Air Cleaner Co. recently announced a new "Tec Line" of electronic air cleaners.

Due to Electro-Air's "inside curve" intensive pre-ionization principle, these Tec Line cleaners are claimed by the company to be efficient.

Tec Line includes both vertical and horizontal flow units which can be installed in any forced-air heating, ventilating, or cooling system, and their use is claimed to virtually eliminate frequent cleaning.

No-Tank Water Heater Added

—KEY NO. G-1043—

PROVIDENCE, R. I. — Insta-Matic Heater Co. recently announced a new portable no-tank water heater, model 125F.

It uses gas only when hot water is being used. It has 38,000 B.t.u.h. jet-type burner and puts out 34 g.p.h. at 100° temperature rise, the company said.

Unit weighs 14 lbs., is 19 in. high, and is equipped with a 100% shut-off. It features a temperature selecting dial, built-in mixing faucet, and a water pressure regulator.

NOLIN

Leads the Field

WITH THE

Dry Beverage Cooler

- LEADS IN CAPACITY
- LEADS IN QUALITY
- LEADS IN PERFORMANCE
- LOWEST IN PRICE

NOLIN MANUFACTURING COMPANY
1400 LLOYD ST. PH. 3-4454
MONTGOMERY, ALABAMA

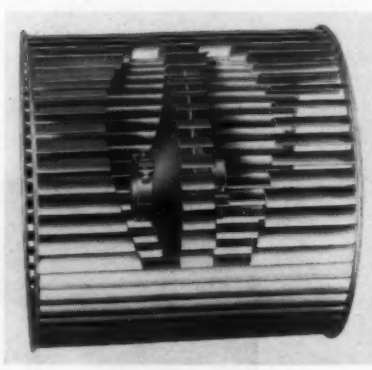
Redesigns Ranges In 'Shape of Tomorrow'

—KEY NO. G-1044—

COLUMBUS, Ohio — Westinghouse Electric Corp. recently announced a completely redesigned line of electric ranges for 1958, styled in the "Shape of Tomorrow" and featuring plug-out surface and oven heating units, infinite heat control, and "Miracle Seal" ovens.

Basic design of all six ranges in the line is the same. All have recessed tops to provide non-drip work surfaces. All platforms are divided, with the work surface between two pairs of cooking units. All models have a 23-in. master oven. The double-oven "Imperial" AL-40 also features a 12-in. "thrift" oven.

Blower Hub Said To Offer Greater Stability

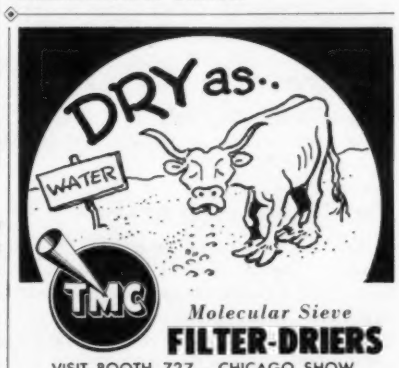


—KEY NO. G-1045—

DAYTON—A new type of hub for large bore application that is claimed to result in greater stability as well as a substantial cost reduction is now being made an integral part of large-size blowers manufactured by Lau Blower Co.

New design is available on all blower wheels from the A-9 (9-in. diameter) through the A-30 (30-in. diameter). Hub diameters are 2 to 4½ in.

Each large hub section is made from a single sheet of metal extruded under die pressure, the manufacturer stated.



Molecular Sieve
FILTER-DRIERS
VISIT BOOTH 727 - CHICAGO SHOW
TUBE MANIFOLD CORP., N. TONAWANDA, N. Y.

ARE you in need of a "just right" man to fill a slot in your organization—the man you are looking for will be reading the

NEWS' CLASSIFIED ADS

(See Page 38)

Information Center

For *more information* on What's New products, current literature and catalogs available, equipment advertised in AIR CONDITIONING & REFRIGERATION NEWS use Key Numbers where designated or specify products advertised and we'll see that you receive this information promptly.

Products Advertised
(list name, page, and issue date)

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What's New or Current Literature Available

Key No. ..... Key No. .....
Key No. ..... Key No. .....
Key No. ..... Key No. .....
Key No. ..... Key No. .....
Key No. ..... Key No. .....

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Readers Service Dept.
450 W. FORT ST. DETROIT 26, MICHIGAN

For more information about products advertised on this page use Information Center, page 22.

Nor-Lake Adds 2 Ice Storage Bin Models

KEY NO. G-1046

HUDSON, Wis. — Ice storage bins have been added to the line of commercial refrigeration equipment manufactured by Nor-Lake, Inc.

Designed as auxiliary equipment for ice making machines, the bins —a portable and a stationary model—permit storage and service of ice from locations other than those of the ice makers.

Mounted on a four-wheel assembly, portable model (PB150) features stainless steel construction and 150-lb. capacity. Ten-inch back wheels and front swivel casters are coupled with a narrow (18 in.) width and tubular steel push handle to facilitate movement.

Stationary model (SB24) is suited to remote ice service in taverns and restaurants. A sloping front facilitates entry into the 150-lb. galvanized bin, while 6-in. legs provide for easy cleaning beneath the unit.

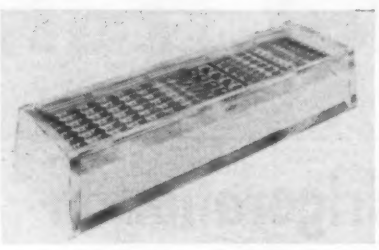
Adds 'Saf-T' Scaffolding

KEY NO. G-1048

PHILADELPHIA—Carmic Mfg. Co., Inc. has introduced new "Saf-T" light duty scaffolding made with the stainless spring lock. Is very light in weight. One man can easily move an entire section.

All Saf-T frames are safety engineered, made of high carbon steel to give lasting strength and durability. The unit is claimed to safely support loads up to 50 p.s.f.

Announces 36-In. Front Island Merchandisers



KEY NO. G-1049

MARSHALL, Mich.—Two models of a "Deep Cold" island merchandiser have been added to the "Stadium" line manufactured by Sherer-Gillett Co. here, it was stated.

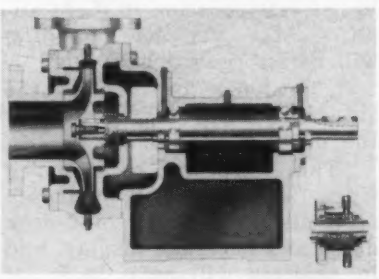
The 36-in. high "low-front" merchandisers provide maximum selling effort and eye appeal, the company states. Futuramic styling and stadium capacity—seven packages to back, nine high, top to bottom—are designed for mass merchandising. "Nubelon S" finish offers resistance to corrosion, impact, and abrasion both on the exterior and interior, the company says.

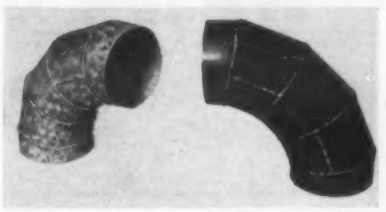
Produces High-Head Centrifugal Pump Line

KEY NO. G-10410

QUINCY, Ill. — A new line of high-speed, high-head centrifugal pumps for general water service has been announced by Gardner-Denver Co.

New model BH pumps are available in four sizes—a 1-in. model with capacities to 150 g.p.m., and 1½-in. model, 2-in. model, and a 3-in. model.





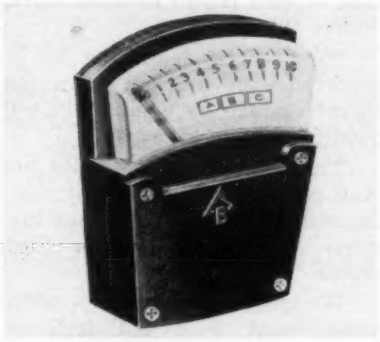
Blow Pipe Elbows Arc Welded Tight

KEY NO. G-10411

DETROIT — New production techniques in the fabrication of blow pipe elbows, developed by Wer-Coy Co. have resulted in elbows of five and seven piece, air-tight arc welded construction and available in 14, 16, and 18-gauge black iron or galvanized with sizes from 3 to 20 in.

All standard degrees of angles from 15 to 90°. A wide variety of throat radii—from 2in. to 1½ times the diameter of pipe are available.

Elbows now have a guaranteed tolerance of not more than or less than 1/16 in.



Heating Balancer Simplifies Adjustment

KEY NO. G-1047

PITTSBURGH — A new instrument, the "FloRet" forced air heating balancer, introduced by Bacharach Industrial Instrument Co., is said to simplify adjustment of residential installations for maximum comfort.

FloRet is pocketsize, easy to use, and requires no connections. Held against the register, it instantly indicates whether air flow is within the comfort range.

This instrument enables equalizing air flow from all warm air registers for initial balancing adjustment, and setting of blower speed for comfort air circulation.

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means low prices!

LARKIN CEILING HUMI-TEMP

Price is only one factor in the selection of any product—especially one that has so important a task as protecting valuable perishables. Performance must come first. Quality cannot be overlooked. Durability is highly important. Larkin has all of these. And Larkin has low prices, too. Compare them and see for yourself how low they are.

For the latest Larkin price list, see your wholesaler. If you wish, write direct to us. We shall be glad to send you one.

•

Manufacturers of the original Cross-Fin Coil • Humi-Temp Units • Frost-O-Trol Hot Gas Defroster • Air Cooled and Evaporative Condensers • Cooling Towers • Air Conditioning Units and Coils • Direct Expansion Water Coolers • Heat Exchangers

LARKIN COILS INC.
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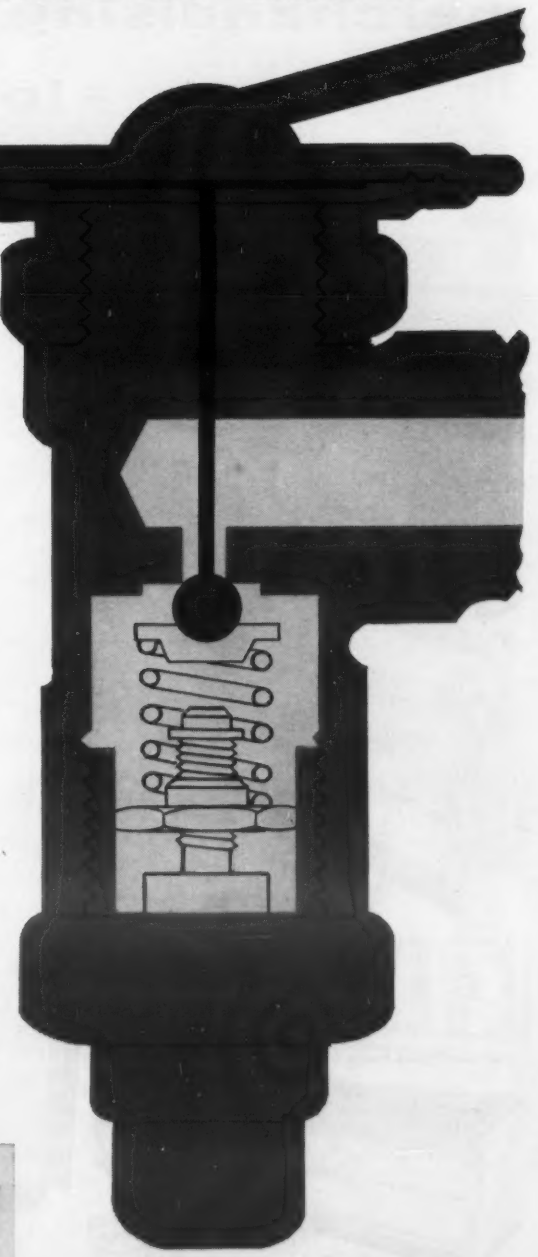
IT'S HERE... COMPACT CAPACITY

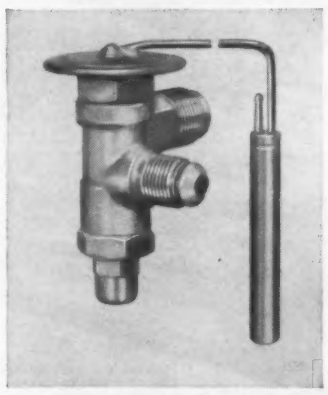
DETROIT'S ALL NEW EXPANSION VALVES

An entirely different concept in expansion valves—the completely new No. 717 and No. 718. Each of these valves is designed with a minimum of moving parts, to provide a more compact unit with greater capacity.

These new valves offer:

- **The Smallest Valves Per Ton Of Refrigeration**
  Broader use in more limited spaces.
- **Close Superheat Control**
  Minimizes surge for maximum valve operating efficiency.
- **Broad Range Of Application**
  ½ to 3 tons R-12
  ½ to 5 tons R-22
  C and Z charges available.
- **Easier To Service**
  Entire valve easily disassembled for inspection and cleaning.
- **Connection Sizes**
  ¼ and ⅜ S.A.E. Inlet with strainer.
  ½ S.A.E. Outlet.





The new No. 718 Expansion Valve. Also available with external equalizer.

The No. 717 is a factory set valve of the same basic design as the No. 718 Expansion Valve. The No. 717 superheat setting is easily adjusted in the field before installation, with an Allen wrench through the inlet connection, to allow superheat settings other than standard. The adjusting screw is not sealed or soldered.

For complete information see your DETROIT Wholesaler.

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Sees Increased Amount of Refrigeration In Big Markets, Air Conditioned Cutting Rooms

SAN FRANCISCO—"Our experience has been that an increasing amount of refrigeration equipment is going in the supermarket as compared to two and three years ago."

So reports George Eskra, executive vice president of The Ray Winther Co., Hussmann distributor, which has four locations in the bay area and makes installations in northern California.

"As an example," he said, "we have one market right now—to be installed sometime later this year—which will have 106½ hp. of refrigeration in it. In addition, the complete building will be air conditioned.

"This 106½ hp. includes the air conditioning horsepower for the meat workroom.

"This store will be equipped with 192 lineal feet of frozen food display, 144 ft. of 3-deck dairy and beverage display, and in addition will have 16 ft. of refrigerated cases for egg display alone, 60 ft. for self-service meat display, and 84 ft. for refrigerated produce.

"That is a tremendous lot of refrigeration in this market, a total of 469 lineal feet of refrigerated cases.

"We have another market that we are going to install in about two months for a local chain which has been purchasing from us regularly.

"In the past they have had in the neighborhood of 30 to 40 hp. for refrigeration. This new market is going to have 60 hp. which will refrigerate 80 lineal feet of self-service meat, 152 lineal feet of frozen food cases, 48 ft. of 'deli' and dairy cases, 72 lineal feet of refrigerated produce, and an 11 glass door walk-in reach-in which is used for beer and milk alone.

"Compared to the stores which they equipped about two years ago, this new market has about double their previous footage.

"Another interesting thing about all of these new markets is that it is a must for them to have backroom frozen food storage rooms.

"Some of them that in the past did not have coolers for storage of produce are using that now, and in addition have beverage and dairy storage coolers.

"One of the things that seems to be an absolute must now with all new markets is that they are air conditioning their workrooms for meat cutting. Two or three years ago only about half of them were doing that.

55-60° Temperature In Cutting Rooms

"Temperatures used in the meat cutting rooms for air conditioning are 55 to 60° F.

"We have made one installation of cold tables in meat work rooms this year.

"Now there seems to be a preference by market operators to refrigerate by completely air conditioning work rooms.

"The market that we did install cold tables for, has air conditioning in the meat cutting space in addition to the cold tables.

"We have had experience with some meat men not holding their cutting rooms at 55 to 60°. Some of them turn their thermostats up to about 65, particularly in the warmer climates, because they think the blooming of the meat is better.

Meat Blooms at 62-64°

"A recent experience in the Central Valley, where the meat room had been figured for 55°, developed that they operated the air conditioning to obtain a room temperature of 62 to 64° because they liked the resulting bloom conditions of the meat much better.

"Also in hot weather, they do not like to have too much of a differential for their employes because summer temperatures outdoors can be up to 100 and 105.

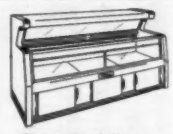
"To have employes working in temperatures too severely below the outdoor temperature does not seem to be satisfactory.

"This market in the Central Valley is located where the outdoor temperature reached 112° on a particular day. We had adjusted the meat cutting room temperature to 55°. The meat manager wouldn't stand for it. He made us adjust it so it would maintain 60° or above.

"There seems to be no objection to operating around 60 to 65° because the bloom is faster. If they work the meat fast it looks very good in the display counters."

Reach-Thru

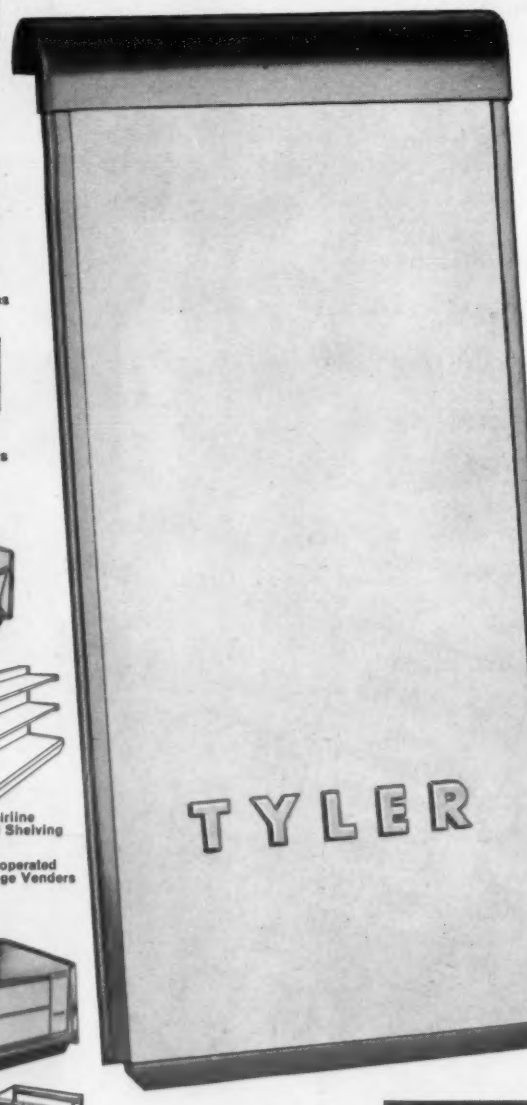
Outstanding merchandisers keep on going Tyler with this COLORFUL—


Frozen Food Cases

Service Cases

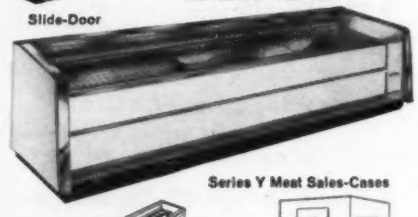
Sign of profitable merchandising – efficient refrigeration – low cost operation

Reach-In



Slide-Door

Self-Service Walk-Ins


Series Y Meat Sales-Cases

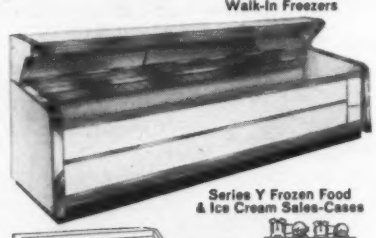
Series Y Produce Sales-Cases

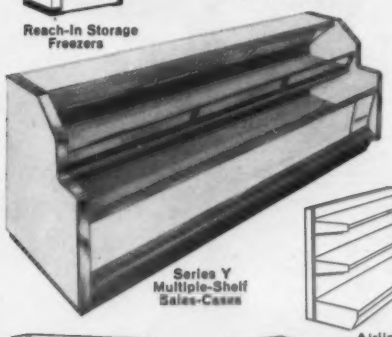
Rolling-Cold Packaging Conveyors

Self-contained Walk-In Freezers

Walk-In Storage Freezers and Coolers

Reach-In Storage Freezers

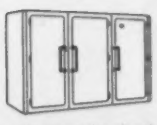

Series Y Frozen Food & Ice Cream Sales-Cases


Series Y Multiple-Shelf Sales-Cases

Airline Metal Shelving

Beverage Coolers

Condensing Unit Assemblies


Sectional Storage Freezers

Coin-operated Beverage Venders

Series Y Adjustable-Shelf Dairy Sales-Cases

Series Y Super-capacity Meat & Dairy Sales-Cases

Refrigerated Tables

Wherever you see this Tyler Color Panel, remember it as the symbol of an efficient, profitable food merchandising operation. The Big Tyler Line—*which offers complete food refrigeration equipment for both sales area and backroom* enjoys unusual acceptance among shrewd equipment buyers. Tyler represents the best value for your investment . . . with very latest convenience features . . . lower operating and maintenance costs . . . Tyler-Ketcham Color Compatibility System for profitable use of color in the store . . . other Advanced Design features that defeat costly obsolescence.

30th YEAR
TYLER
PIONEER of important improvements

TYLER REFRIGERATION CORPORATION, Niles, Mich.
Canada: Tyler Refrigerators, 732 Spadina Ave., Toronto, Ont. (Export: Tyler Refrigeration International, C. A., Casa Bera, Urdaneta 119, Caracas, Venezuela)

Send coupon for complete information.

Send coupon today for complete information

Tyler Refrigeration Corporation, Dept. AR-10, Niles, Michigan
Rush latest data on new Tyler ☐ Sales-Cases (Series Y) ☐ Rolling-Cold Packaging Conveyors ☐ Walk-In Coolers ☐ Storage Freezers ☐ Reach-In and Reach-Thru Refrigerators ☐ Service Cases ☐ Condensing Unit Assemblies ☐ Airline Shelving ☐ Tyler-Ketcham Color System ☐ Store Planning.
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Instruments
THE SERVICEMAN LINE of Testing Gauges, Testing Thermometers, Timers, etc.
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For more information about products advertised on this page use Information Center, page 22.

Refrigerated Meat Department Was Big Attraction at Yugoslav Trade Fair

ZAGREB, Yugoslavia—Housewives of this Communist city swarmed through a typical American neighborhood supermarket, first ever shown in a Red nation, as the Zagreb Grand Fair which opened Sept. 7 and ran through the 20th.

A joint effort of the National Association of Food Chains and the Office of International Trade Fairs of the Commerce Dept., the exhibit was full-sized and fully-equipped and stocked with replica of a modern U.S. supermarket.

Tyler Refrigeration International, C.A., export division of Tyler Refrigeration Corp., was selected to supply and install some of the latest commercial food refrigeration equipment for "Supermarket U.S.A." here.

Tyler supplied 60 ft. of meat "Sales-Cases," 32 ft. of produce Sales-Cases, and factory-engineered water-cooled condensing unit assemblies with pre-wired controls. Sven Swanson, Tyler International technical director, supervised installation of refrigerated food store equipment and "Airline" adjustable metal shelving.

Other equipment, fixtures, supplies, and merchandis for Supermarket U.S.A. was supplied by several hundred other U.S. manufacturers.

The market was the rage of Zagreb. "Look at the meat," said one goggle-eyed visitor. "It's all packed and assorted, the price is marked on it and you just know it's clean!"

Completely self-service, Supermarket U.S.A. included about 7,000 sq. ft. of selling space and was operated in such a way as to acquaint Fair visitors with the wide variety of foods available in the U.S. It probably will now be sold to a Yugoslav enterprise.

One housewife asked, "Why would it be so difficult for us to package meat this way?" A little paper, that's all there is to it. Our market should be oriented this way: Hygienic, it's wonderful!"

President Tito's wife, Mme. Jovanka Broz, seemed in a mind to linger in the supermarket when she visited it. It is said everyone who entered went away impressed.

Squirt OKs La Crosse Vendors

LA CROSSE, Wis. — The Vending Machine Div. of La Crosse Cooler Co. announced that approval of its vending equipment has been received from the Squirt Co. of Sherman Oaks, Calif.

A company spokesman said all of La Crosse's coin-operated selective vendors are now available in Squirt yellow and will also be provided with the identification sign developed by Squirt management.

For Your Reprint Copy

"Emergency Diagnosis, Repair of Hermetic Unit Electric Components," by John L. Zant, mail this ad with your name and address to: Air Conditioning & Refrigeration News, 450 W. Fort, Detroit 26, Mich.
Only 25¢ each.

Discuss U. S. Market For '58 Moscow Fair

WASHINGTON, D. C.—Discussions have been held at the International Trade Fair Div., Dept. of Commerce, about displaying a U. S. supermarket at a trade fair in Moscow next August. However, officials said nothing had been settled yet.

Similar exhibits were presented at an international food meeting in Rome last year and at a trade fair in Zagreb, Yugoslavia last September. They were handled by National Association of Food Chains.

Speaking in New York City, Rep. Vincent L. Anfuso, chairman of the House subcommittee which held a food price hearing recently, said he understood that "plans were well under way" toward such a move.

Pioneer Refrigeration Salesman C. Windel Dies

HOLLINS, Va.—Carl Windel, pioneer refrigeration salesman and Office of Price Administration official handling commercial refrigeration in World War II, died recently at his home here.

Selling Copeland refrigeration products, Windel was the winner of one of the first contests for salesmen ever held in the industry. In recent years he operated a motel near here. He is survived by his wife.

Seabrook To Take over 'Snow Crop' Frozen Fruit, Vegetable Distribution

NEW YORK CITY—Nov. 1 is the date set by Minute Maid Corp., owner of the "Snow Crop" brand of frozen fruits and vegetables, and Seabrook Farms Co. for the latter to take over processing and sales of Snow Crop over most of the U. S.

The arrangement does not cover frozen citrus juices which Minute Maid will continue to process and sell under its own and the Snow Crop labels, it was explained.

Minute Maid will also go on selling the Snow Crop line of fruits and vegetables in 11 western states as well as in Canada and in the export, government, and institutional markets, according to the announcement.

Your Customers' Best Buy. . .
(and yours, too!)
IDEAL
Speed-Freeze
PRODUCTS

BEVERAGE COOLERS
unexcelled storage capacity with Ice Cube Makers

OUTSTANDING SECTIONAL METAL WALK-IN COOLERS

IDEAL
COOLER CORPORATION
2830 MAGAZINE ST.
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REVERE
DRYSEAL
COPPER REFRIGERATION TUBE

Not one but two crimps are made in each end of DRYSEAL. This is the final step in manufacturing, that immediately follows a special cleaning and dehydrating operation, which keeps dirt and moisture from entering the tube.

The seal is made in such a way that the diameter of the tube does not change, which permits DRYSEAL to be passed through any opening large enough for the tube itself.

As for bendability—the soft temper of the copper used in DRYSEAL allows you to make the most intricate bends by hand. And its ductility and soft temper make it extremely easy to flare for compression fittings without danger of splitting. Economical tube sizes range from ⅛" to ¾" O.D.

Also you'll find the job-size, 50-foot one-coil pack easy to handle, light weight, economical.

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COPPER AND BRASS INCORPORATED
Founded by Paul Revere in 1801
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Mills: Rome, N. Y.; Baltimore, Md.; Chicago, Clinton and Joliet, Ill.; Detroit, Mich.; Los Angeles and Riverside, Calif.; New Bedford, Mass.; Brooklyn, N. Y.; Newport, Ark.; Ft. Calhoun, Neb. Sales Offices in Principal Cities, Distributors Everywhere.

Commercial Refrigerator Sales

(Concluded from Page 1)

definite dampening effect caused by the tight money situation, which caused many proposed installations of commercial refrigerator equipment to be cancelled or deferred, is no longer a major factor. Some of the benefits from this "reinstituted" business will not be realized until 1958.

Demand for commercial refrigerator equipment from food service establishments is running better than that from retail food stores (on a relative basis). In fact, this segment of the industry is said to be running slightly ahead of 1956 on sales and shipments.

Reason for the good market among food service establishments is the fact that restaurants and institutions apparently are finding they need more equipment, possibly because of greater use of frozen foods, and an increased interest in portion-control methods. Toll-road and other highway building projects have resulted in the establishment of many new restaurants and lunchrooms.

One bright spot in the retail food market picture is a growing business in replacement sales. Self-service equipment in high turnover stores is being replaced in increasing volume, for style or other reasons. Many merchants are finding that they need more refrigerated space to take care of the increasing variety of products, particularly frozen foods.

Another factor is the improved design, better refrigeration, larger capacities, and more refrigerated shelves to utilize "air rights" in the store, are inducing merchants to replace equipment in a shorter period of time, it was pointed out.

Some idea of how the total of the major types of commercial refrigerators (the 152,000 figure) breaks down by various types of products may be determined by reference to 1956 product ratios on sales of equipment reported by members of the Commercial Refrigerator Manufacturers Association.

The table shows the 1956 ratios of various types of products to the total commercial refrigerator shipments as reported to the CRMA (it is said that the 1957 ratios are showing little change from the 1956 figures).

PRODUCT OR CLASSIFICATION	%
1. SD display cases, closed	2.2
2. DD display cases, closed	4.3
Total, this classification	6.5
3. SD display cases, open SS	5.5
4. DD display cases, open SS	9.2
5. Multiple deck display cases, open SS	11.7
Total, this classification	26.4
6. All other display cases	0.6
Total, all above types	33.5
7. SD vegetable cases, open SS	5.9
8. DD vegetable cases, open SS	4.4
9. Vegetable refrigerators, closed	1.2
Total, this classification	11.5
10. Low temperature refrigerators, open SS	31.8
11. Low temperature refrigerators, closed	0.4
Total, this classification	32.2
12. Upright freezers	2.4
13. Dairy refrigerators, wall boxes, etc.	2.0
14. Reach-in refrigerators	7.1
15. Walk-in coolers	7.4
16. All other C-R equipment	3.9
	100

In items other than market fixtures and food service refrigerators, there were some downward trends, and a few that showed improvement.

Ice cream cabinet sales were off somewhat substantially. Water coolers were thought to be off, but only slightly. Ice makers were estimated to be running at about comparable levels with the past couple of years.

Milk coolers were said to have shown an increase because of the fast-growing interest in the bulk milk coolers.

Refrigerated vending machine sales were estimated to be up in total number of sales, because of gains in the cup-type category, and in milk venders and coffee venders (which need a refrigerated compartment for cream). Bottle vender sales were said to be off somewhat.

A decrease in bottle beverage cooler sales was said to be attributable in part to the loss of part of the market to vending machines.

There is a variety of other commercial refrigeration applications on which it is difficult to project any kind of a figure. Truck refrigeration systems would constitute a substantial figure, as would ice cream freezers and frozen custard machines. Salad and sandwich refrigerators used in the restaurant and institutional field represent another sizable category.

Of the classifications for which figures are given, practically all are self-contained except for some of the display cases and walk-in coolers.

To handle these and other non self-contained applications, and for replacement in existing systems, up to 300,000 compressors and condensing units will probably have been sold this year.

Commerce Dept. Issues Flexible Polyethylene Plastic Pipe Standard

WASHINGTON, D. C.—U. S. Commerce Dept. recently issued a new commercial standard for flexible polyethylene plastic pipe, CS 197-57.

An additional yardstick by which users can measure quality of plastic pipe, copies of the standard are available from Superintendent of Documents, Government Printing Office, Washington 5, D. C. for 10 cents a copy.

Hussmann Reports 3rd Quarter Net Profit at $564,975

ST. LOUIS — Hussmann Refrigerator Co. reported net profit for the third quarter ended Sept. 30 totaled $564,975 equal to 47 cents a common share compared with $913,587 equal to 74 cents a share for the like 1956 period.

Net profit per share shown in 1956 is after adjustment for the two-for-one split effected in October of last year, the company explained.

Net sales for the third quarter amounted to $8,368,845 as against $9,605,899 for the same 1956 period with total sales for the first nine months to Sept. 30 reaching $23,892,306 compared with $24,625,214 for the same period a year ago.

Earnings for the nine-month period amounted to $1,716,755, compared with $2,123,182 in the year-ago period. Earnings per share of common stock based on 1,200,282 shares outstanding was $1.38 for the first nine months of 1957 against $1.70 for the same months last year.

W. B. McMillan, president, indicated "there has been a substantial reduction in the number of new supermarkets opened during 1957 and very keen competition for the available business." However, he continued, the demand continues steady and there is some indication of an improvement in the months ahead.

Kwik-Chek's Fourth Unit Features Frozen Meat, Fish Display

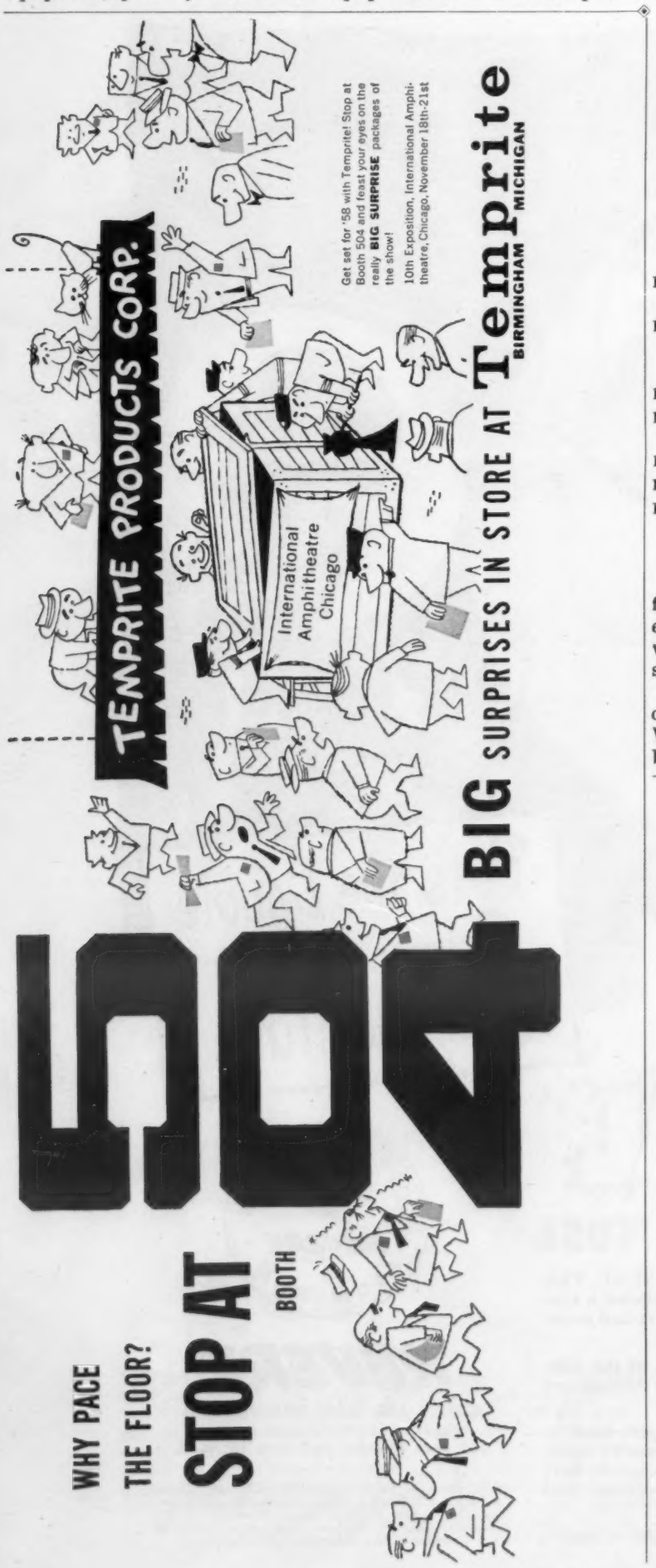
MONTGOMERY, Ala. — An 18-ft. open display of frozen meats, fish, and poultry is one of the features of the new Kwik-Chek Super Market at Fairview and Cleveland Aves.

Kwik-Chek's fourth unit in Montgomery, the new store is air conditioned throughout. It provides 15,000 sq. ft. of floor space.

All cutting of meats, etc., and pre-packaging is done in a 50° room with ultra-violet lighting. Adjoining this room is the cooler (12 by 20 by 9 ft.) with a 32° temperature, and adjoining it is a freezer (8 by 8 by 9 ft.).

A special unloading area permits meats to be taken from refrigerated trucks, placed on a conveyor, and carried to the cooler in a matter of seconds.

Self-service meat cases extend for 100 ft. across the rear. Frozen foods cases total 85 ft. in length, and a new-styled produce rack, serviced from the rear so employes will not get in the way of customers, is 75 ft. in length.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BIG SURPRISES IN STORE AT
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WHY PACE THE FLOOR?

Thinking of —

- **changing territories**
- **expanding your territory**
- **taking on new lines—**

Check the
CLASSIFIED ADS

Your opportunity may be there.

For more information about products advertised on this page use Information Center, page 22.

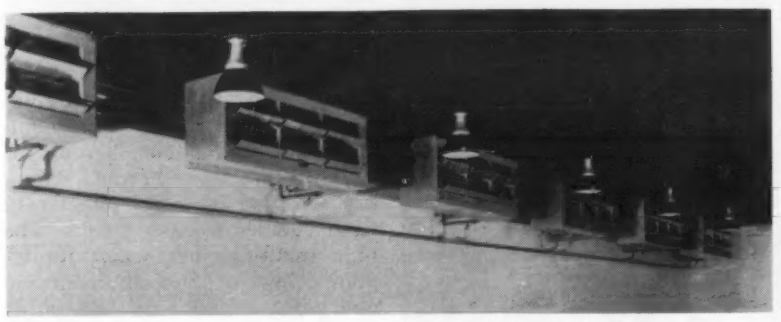
For Peak Holiday Sales

Firm Stores Rosebuds Up to 7 Days by Proper Temperature, Humidity Control

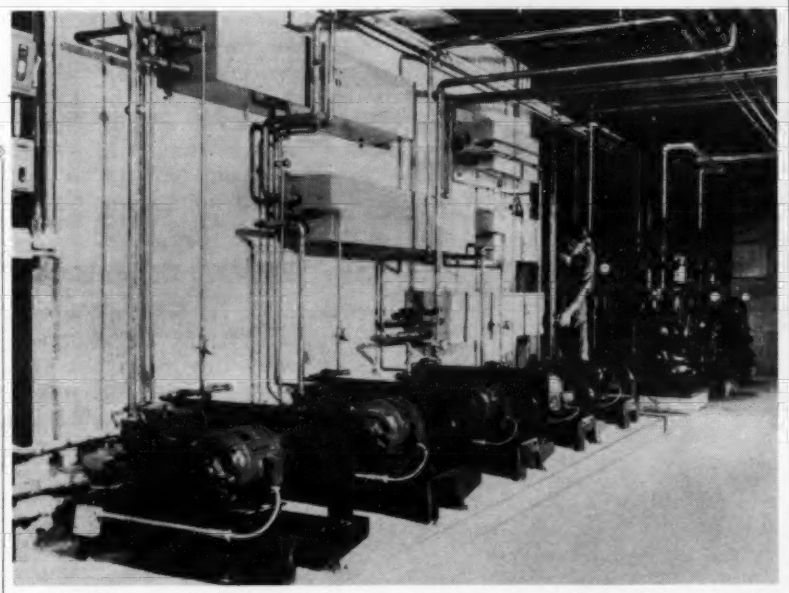
RICHMOND, Ind.—Hill Floral Products Co. here, through proper temperature and humidity control, has been successful in storing roses in bud form for periods up to seven days, it was reported recently.

In order to do this, it is using an optimum storage temperature of 31° F. plus or minus ½° and is able to accumulate large quantities of perfect rosebuds for storage before peak selling holidays. The buds are shipped so that they arrive at florists' shops throughout the country and open to form perfect roses for the holiday.

The narrow limits for permissible temperature variation and the formation of frost on the refrigeration coils at the specified temperature made the selecting of equipment which would insure complete rapid defrost operations necessary, it was pointed out.



ROSEBUD storage room maintained at 31° plus or minus .2° for long term bud storage at Hill Floral Products Co., Richmond, Ind. Six Kramer "Thermobank" evaporators (model TV280) provide automatic hot gas defrosting. Two coils defrost while other coils continue refrigeration.



MACHINERY room at Hill's contains three 3-hp. and two 1½-hp. Frick condensing units with "Thermobank" re-evaporators on wall above them.

A prolonged defrost operation would allow the room temperature to go above 31½°. According to a Hill Floral Products spokesman, this fluctuation in temperature would shorten the length of time that the buds could be held in storage.

Hayes Bros., Inc., Indianapolis refrigeration contractor and engineer, installed the refrigeration system. The storage room represents an area of 35 ft. by 32 ft. by 10 ft. 4 in. high, inside measurements, with an ante-room of 16 ft. by 32 ft. by 10 ft. 4 in. high. Part of the contract included a guarantee to hold 31° plus or minus ½°.

William F. Freije, manager of Hayes Bros. Refrigeration Div., selected Kramer "Thermobank" automatic re-evaporative hot gas defrost system manufactured by Kramer Trenton Co., and three 3-hp. and two 1½-hp. Frick condensing units for this job.

In the storage room, he placed three #10 Kramer Thermobank combinations, each consisting of two TV280 evaporators. Each combination is connected to a 3-hp. Frick compressor. The six ceiling suspended TV280's are equally spaced along the 53-ft. room length. The three systems are arranged so that they defrost at different times. Only two of the six Thermobank evaporators are defrosting while the other four are still refrigerating.

The ante-room has two model TV280 Thermobank evaporators, each connected to a 1½-hp. Frick condensing unit. These units also defrost at different times.

Freije reports that this job surpassed specification of plus or minus ½° and is able to maintain 31° plus or minus .2°.

Calif. Contractors' Group Installs '58 Officer Slate

RIVERSIDE, Calif. — Inland Air Conditioning & Refrigeration Contractors Association, Inc. recently installed its 1958 officer slate at Arrowhead Springs hotel, San Bernardino.

Thomas C. Herbert is incoming president, James M. McDonald, vice president, and John H. Wingate, secretary-treasurer.

New members of the board of directors are Thomas E. Topham, George J. Robinson, J. W. Eicheer, and James W. Collins. Elmer F. Hill was installer.

Gloekler

A FAMOUS NAME IN COMMERCIAL REFRIGERATION FOR OVER 50 YEARS!

As a pioneer designer and builder of commercial refrigerators, with more than 50 years of experience, Gloekler offers these important advantages:

1. Your customers get the finest construction materials and design plus the all-important benefits the industry's most advanced skills and facilities can offer.
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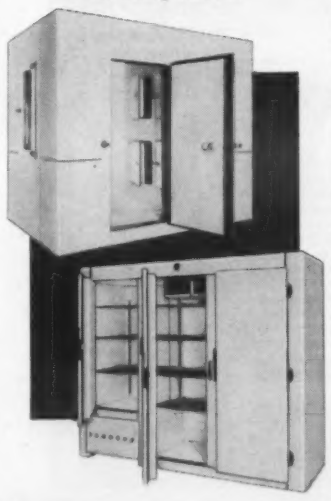
WALK-IN & REACH-IN
Standard and Custom Designs for Every Need!



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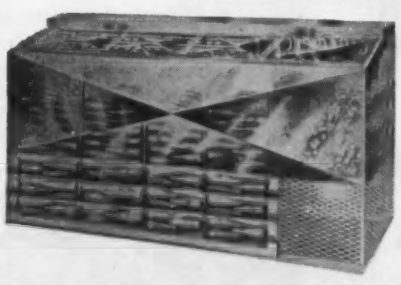
P.O. Box 1154-AC
ERIE, PA.

"A CASE OF COOL JUDGMENT"



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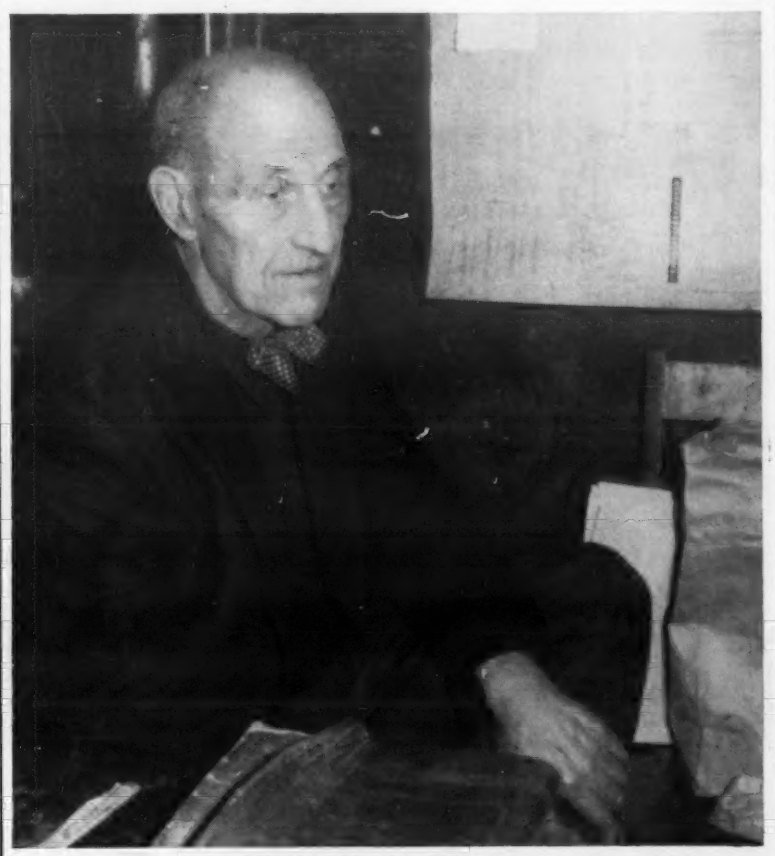


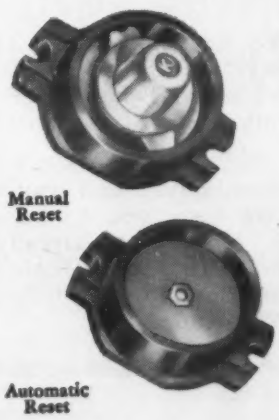
"KLIXON Protectors Help Cut Down Motor Burnouts"
says New York motor repair shop owner

SYRACUSE, N. Y.: Charles T. Russell, co-owner of the Russell Electric Co., knows the value of KLIXON Motor Protectors. He says,

"It has been my experience that a burned out motor equipped with a Klixon Protector is a rarity."

KLIXON Protectors Reduce Service Calls and Repairs by Preventing Motor Burnouts

The KLIXON Protector is built into the motor by the motor manufacturer. In such equipment as refrigerators, oil burners, washing machines, etc., they keep motors working by preventing burnouts.



Manual Reset

Automatic Reset

For increased customer-preference, reduced service calls and minimized repairs and replacements, it will pay you well to ask for equipment with KLIXON Protectors.

Write for the new free informative booklet, "The Story of The Spencer Disc."

METALS & CONTROLS CORPORATION
Spencer Thermostat Division
2410 Forest Street, Attleboro, Mass.
KLIXON

Color Compatibility In Food Store Fixtures, Decor Ups Impulse Buying

In this dominating meat display in Eberhard's supermarket, Grand Rapids, Mich., oatmeal beige Tyler sales cases and walk-in cooler with vertical mint green accent panels have been expertly color planned in relation to sand and gray floor, light green walls, and warm tone ceiling.

By Howard Ketcham, Howard Ketcham, Inc., Color and Design Engineers, New York City

Today, color planning is a major factor in food store planning. More and more shoppers are becoming color conscious—they look for and expect, color in their favorite markets.

Appropriate color symbols tag different departments; professionally selected colors in store equipment and decor improve product appearance and boost sales. Supermarket surveys show that 78% of sales are the result of impulse buying and correct colors generate impulse appeal.

The right colors will give a store its own, distinct personality, create a buying atmosphere and help win competitors' customers. Recognizing these facts, our firm in conjunction with Tyler Refrigeration Co., decided to do something to enable the smaller food store owners to benefit from the selling values of color. The result was the Tyler-Ketcham "Color Compatibility System" which gives the small food store owners the same opportunity to employ color as sales and prestige builder as the large supermarkets.

Many big chains have turned their stores into colorful and attractive shopping areas. The operators of many smaller food outlets believe that they haven't the capital or experienced consultants to compete effectively with color. As a result, many of their markets are still painted white—a color considered to have some natural association with the selling of food, but which, in reality, lends a cold, clinical, impersonal, institutional look to a market where warmth, cheer, and homeiness should be in order.

System Aimed at Giving Small Stores Color Advantages

The color system I developed in association with Tyler is aimed at giving to the small food operators, the same color advantages that their giant competitors have. It's objectives are:

1. To attract attention to merchandise
2. To please the eye of the shopper
3. To sell more merchandise
4. To emphasize the individuality and character of the store.

The easy-to-use system prescribes four groups of colors from which many complete and distinctive color plans for markets can be developed. Each is built around the nine standard colors available in the full line of refrigerated sales cases and storage freezers manufactured by the Tyler Refrigeration Corp.

The sales case colors are divided into four groups and each group is combined with a selection of compatible colors for walls, ceilings, floors, and signs—colors which tests show increase sales.

To make the color plan easy and practical for owners of small groceries, the system uses compatible paint colors from nationally distributed paints which are selected to blend effectively with the show case colors. The paint manufacturers and applicable colors are listed in simple chart form. To find the paint color that will suitably harmonize with the show case color, the store owned need only refer to the chart.

For example, a compatible wall color for the new Crushed Strawberry frozen food case is Green No. 458 in the Tyler-Ketcham system which is duplicated by the standard Green No. 854 in the Nu-Hue line of the Martin-Senour Paint Co.

Recommend 2 Groups For 'Color Air Conditioning'

Two of the recommended color plan groups are designed for "color air conditioning." One is for stores in warm, southern climates, the other for cool northern areas. These are presented in a full color brochure, prepared by Tyler, entitled "Color in the Store." This brochure also includes complete instructions on the Tyler-Ketcham System, reproductions of all the colors used, and full color illustrations of typical store interiors.

To put the system into practice, commercial refrigerator salesmen use the brochure, plus a "Color Visualizer." This is a kit containing outline drawings of typical stores, along with representative suggested compatible color samples of paint, floor tile, and wallpaper, scale cutouts of typical market equipment such as refrigerated cases, and a layout sheet in the same scale as the cutouts, together with a box of colored pencils that duplicate the colors.

When these salesmen visit a store owner who wishes to modernize and improve his store's appearance, they actually show on the layout what the store's interior color plan can look like—or what the owner wants it to look like. The planned layout is designed for minimum investment in floor tile, wall paint, wallpaper, and the color-styled refrigerated cases.

Then, using the Compatibility System colors, the salesman puts into the outline drawings and scale layout the exact colors the owner selects for his store.

Store Owner Sees What He's Getting

It gives the store owner a chance to see what he's getting before it's installed. One of the reasons that the smaller markets have been reluctant to ride the color boom has been that changing color—repainting, reflooring, and buying new fixtures—runs into money. The owner doesn't want to reach into his pocket until he's seen what he's going to get. Now he has a chance to see just that. In addition, the color plan is designed so that the store owner can incorporate the improvements in his regular maintenance cycle.

For example, the first year he can repaint; the second, install the color-refrigerator sales cases; the third, lay down new floor tile; and completely finish the job in the fourth year. Thus, the retailer's color planning can be amortized over a four-year period.

Operators of a New England chain recently reported that, "the introduction of color into our stores has increased sales in a part of the country which is particularly conservative . . . it's hard to find anybody willing to take our previous white refrigeration equipment off our hands."

Food store owners *are* impressed by the sales-boosting results of this unique service. Many have contacted our office or Tyler for more information

(Concluded on next page)

MANUFACTURERS' REPRESENTATIVES

As an industry service, the NEWS maintains a file of manufacturers' representatives—serving the air conditioning, refrigeration, heating, and allied fields. Territories cover all sections of the United States and some foreign countries.

If you are a manufacturers' representative, who wants to change or add to your line, we urge you to take advantage of our special service. If you are already listed with the NEWS, and want to bring your listing up-to-date, you also should send us the following information today (Please use your letterhead):

1. **Complete name of your company or individual, address, and phone number.**
2. **Lines and products now carried (not necessary to list manufacturer represented).**
3. **Products and lines you want to add.**
4. **Territory covered by states, regions, or countries.**

If you are listed with us, bring your listing up-to-date. If you are not listed, send the above information now to:

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Freze-Cel DOUBLE CONTACT PLATE FREEZER
DOLE THE Cel LINE

For more information about products advertised on this page use Information Center, page 22.

Color Fixtures--

(Concluded from preceding page)

to be sure they are selecting the best possible combinations. And the color plans make any store distinctive. Only last month, the owner of a Palm Beach specialty food store volunteered information as to how our plans had given her new store an exclusive edge over other markets in the vicinity.

Green 'Good' with Meat, Seafood

Two shades of green, Martin-Senour's No. 854 and No. 560, for instance, prove especially good in conjunction with meat or seafood. They are crisp, complementary colors that suggest not only freshness, but they also emphasize the redness of meats. Ice Blue, matched by Martin-Senour's No. 892, and Butter Yellow, matched by Martin-Senour's No. 658, two colors that differ considerably, have proven equally appropriate for dairy products.

Blue Displays Ice Cream Well

Another new shade in the Tyler line for frozen food cases is Huckleberry Blue. It is particularly well suited as a background for displays of ice cream packages. Peach Pink and Crushed Strawberry Red accent the appetizing quality of specialties such as complete packaged dinners or imported delicacies as well as frozen foods of any sort.

Colors such as these stimulate shoppers by contributing to emotional appeals which draw people to merchandise that might otherwise be completely overlooked, or even avoided when housed in drab or inappropriate display cases. Records of increased sales through use of the right color prove that this is an area which pays off substantial dividends in stores large or small.

Up-to-Date Small Scale Markets Gaining To Fill Void as 'Mom-and-Pop' Stores Die

SAN DIEGO, Calif.—Small-scale supermarkets are gaining in number in some sections of the country.

For example, eight new stores were scheduled for operation by Handy Pantry Inc. here, and a "Bantam Super" pilot store in St. Louis was reported showing "good" results after five weeks' operations.

Handy Pantry, a recently-formed franchising company, has tested two new 2,400-sq. ft. stores here and planned to add six more by Nov. 1, according to Secretary-Treasurer Nathan Coleman.

"We felt there was a real need for this type of operation in every community," he said. "At present many of the larger supermarkets are spread out over far distances from consumers. The older mom-and-pop stores are dropping out of the picture because they lack good controls and the units and equipment are obsolete. We are offering a convenience store, which is efficient and up-to-date."

C. G. Krekelar, president of Tom Boy, Inc., St. Louis wholesaler and developer of the 1,600-sq. ft. Bantam Supper in that city, stated, "I can definitely say that our move to open a Bantam store does not mean we have gone sour on big markets.

"We will continue to develop the larger store customers as fast as we can."

He also commented: "In too many of the small stores we find the owner trying to imitate the big stores. The small store must have its own style. We have also taken the position that price is a major factor in the success of the small store."

The experimental Bantam Super offers 800 to 900 fast-turnover items. The wholesaler reportedly made a total investment of $40,806 in the store. It was estimated that a 12% return could be realized on this investment. A goal of $4,000 weekly was established for the market.

In Denver, an eight-sided, glass-walled, pagoda-roofed structure, first of a proposed 50-unit chain of miniature markets planned by Automart Stores, Inc. in the area, will open early in December, it has been announced.

To be about 60 ft. in diameter, the 2,300-sq. ft. supermarket will have standout features of a catenary steel roof consisting of strips of metal draped from steel beams and then welded which creates an undulating effect, a three-sided pylon of translucent plastic with opaque lettering and spots of coloring supported by a center beam, and be almost completely visible from outside.

John Roscoe, president of Automart, said "We have watched with interest the developing trend of pint-sized markets in other areas and we feel the fast-growing Rocky Mountain area is ready for this type of grocery merchandising."

Stock in the Automarts—which will have vertical parking on all eight sides—will be limited to quick-turnover items, Roscoe indicated. Frozen foods and a limited line of packaged meats and produce will be included in the 2,500 food and non-food items to be carried. Stores will be open from 7 a.m. to 11 p.m.

At ARI Show

Kelvinator Dept. To Discuss Sales Plans

DETROIT — Sales planning and strategy will be discussed by members of Kelvinator's commercial wholesale department during the 10th Exposition of the Air Conditioning and Refrigeration Industry in Chicago Nov. 18-21.

Robert G. Alexander, sales manager of the commercial wholesale department, said the business meeting will be held Nov. 18 in the Hotel Sherman, where the company will make its headquarters.

The agenda will include sales strategy, servicing, financing, advertising, and sales promotion. A luncheon is also planned.

Radiation Sterilization Report Available from U. S.

WASHINGTON, D. C.—A report on the radiation sterilization of foods is available through the Office of Technical Services, U. S. Dept. of Commerce.

"Flavor Changes Induced by Radiation Sterilization," by F. E. Littman and A. P. Brady, of Stanford Research Institute, written for the Quartermaster Food and Container Institute, reports that study of the action of individual free radicals on aqueous solutions of food components is necessary to discover the mechanisms by which off-flavors are formed.

Armour To Make New Frozen Meat Packaging

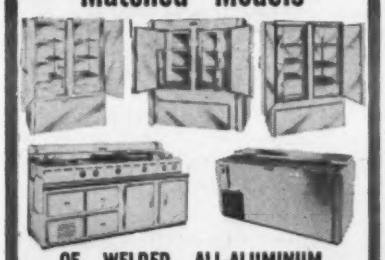
CHICAGO — Armour & Co. announced it would make available frozen meat packaging designed for smaller freezers.

Distribution will be through the firm's sales channels and through brokers and distributors throughout the country. The new line is expected to meet the needs of the retail food market, locker plant provisioners, commissaries, and food service operators using less than the usual institutional-sized meat packages.

FOSTER builds over

200

Matched Models



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"CALGON'S BIG 3 Cooling Water Treatment Products MAINTAIN VERY SATISFACTORY OPERATING CONDITIONS"

Al Greenfield, Maintenance Supervisor, Penn Fruit Company

Keeping the air conditioning and refrigeration equipment running smoothly in a 46-store chain of super markets with annual sales in excess of $134 million is Al Greenfield's job. As part of his well planned preventive maintenance program, Mr. Greenfield has been using Calgon's Big 3 cooling water treating products in the air conditioning equipment in 42 of the Penn Fruit stores. His experience with Calgon products has been excellent, and he states that very satisfactory operating conditions are being maintained. The use of Micromet® Plates and Calgon® Algaecide, in combination with proper bleed, has kept lime deposits and algae under control. Service calls are sharply reduced and equipment is safeguarded. Calgon's Big 3 keep air conditioning and refrigeration systems at top efficiency and protect costly equipment. Here is how they work.

Micromet Plates provide continuous treatment to inhibit further scale formation. A single charge will last about six months and the inexpensive feeding bag is easily installed.

Calgon Algaecide controls algae and slime growths. It comes in pellet form for convenience in handling. Positive action kills the growth. Periodic addition keeps equipment operating efficiently.

Calgon Scale Remover makes it easy to clean up a system completely. Corrosion inhibitors protect system while in use. Special built-in pH color indicator shows how much of scale remover to use, and helps tell when system is clean.

SEE YOUR REFRIGERATION WHOLESALER FOR CALGON'S BIG 3!

CALGON COMPANY

A DIVISION OF HAGAN CHEMICALS & CONTROLS, INC.
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'Egg Cooler Is Profitable Item'

Research Shows Refrigeration Produces Consistently Higher Grade, Brings ¾¢ per Dozen More on Average

STILLWATER, Okla. — Eggs refrigerated immediately after gathering brought better than ¾ of a cent per dozen more—over a year's average—than non-refrigerated eggs, a continuing research project on farm egg coolers conducted by the Oklahoma Agricultural Experiment Station has revealed.

Monetary Advantage Higher in Summer

In data published earlier this year, the researchers reported that the monetary advantage would be substantially greater if computed for the hot weather months only.

"It is apparent," they concluded, "that a farm egg cooler is a profitable equipment item. In order to maximize returns from a farm egg cooler, it appears important to use the cooler to the greatest capacity possible. Returns will increase almost in a direct ratio with increase in cooler loading rate."

The researchers made their comparisons between 41,769 dozen eggs stored in seven-case and 25-case coolers at temperatures varying from 58° to 61° F. and relative humidities ranging from 55 to 70% and an equal number of eggs held in an egg-handling room cooled by a small evaporative cooler.

Eggs were placed under refrigeration shortly after gathering and kept there until marketed at one week intervals. The same treatment was given the non-refrigerated eggs. The egg-handling room had an average maximum temperature of 91° F. during May through September.

The seven-case cooler was refrigerated by a ⅓-hp. room air conditioner and the 25-case cooler by a ½-hp. air conditioner. Both had their thermostats set so that lower temperatures could be obtained.

Because the lower coil temperatures condensed more moisture from the air than was considered desirable to maintain egg weight, pans of water were kept in the coolers to keep humidities up to the desired 50 to 60% or higher level.

Because prolonged exposure at high temperatures causes more rapid deterioration in egg quality, the value of the egg cooler was found to be far more accentuated in summer.

Produces Better Grade Eggs In Winter

Even during the winter months, the egg cooler produced a consistently higher percentage of Grade A eggs than the non-refrigerated egg room with the except of a single month—March—when 88.5% of non-refrigerated eggs were graded A against 87.2% of refrigerated eggs.

But from April through August (with the exception of June when little difference was found) the superiority of the refrigerated egg cooler was marked.

In April, Grade A production was 91% under refrigeration and 73% without; in May 83% as against 77%; in July 85% as against 22%; and in August 86% as against 46%.

Cooler Produces More Grade A Eggs

For the full year, the cooler returned 38,044 dozen Grade A eggs at 38 cents a dozen as against 33,517 dozen for the egg-handling room. Comparative dollar income was $14,456.80 for the cooler and $12,736.57 for the handling room.

The cooler also returned 2,114 Grade B eggs at 35 cents a dozen for a total of $739.75 and 1,656 dozen Grade C eggs at 30 cents a dozen for $496.87.

The non-refrigerated handling room returned 3,210 Grade B eggs for $1,123.31 and 5,030 Grade C eggs for $1,509.09. That made a total income of $15,693.42 for the cooler and $15,368.97 for the handling room. The difference is $324.45.

Suggested Requirements

As a result of the project's work so far, the researchers suggested a number of requirements that should be met in selecting and using a cooler.

They are:

"(1) Cooler size—the annual returns above fixed and energy costs will be greatest if the cooler is used at or close to full capacity, as determined by the marketing schedule. Therefore, one should avoid choosing a cooler too large to be used to nearly full capacity.

"Under current price conditions and costs, if less than approximately ½ case of eggs per day are produced, the seven-case cooler will probably not be profitable. If less than about one case per day are produced, the 25-case cooler will not yield returns sufficient to offset fixed and energy costs.

"(2) Cooler location — The cooler should be located where it will be conducive to frequent gathering and placing of eggs in the cooler and where temperatures will not be unduly high. Power use will be nearly in direct proportion to the difference in temperature between the cooler interior and the air around the cooler.

"(3) Temperature and humidity — Cooler temperatures should be controlled to remain between 55° and 60° F. Relative humidity should be maintained at a reasonably high level of between 55 to 60 to 85%. In our experiments, water-filled pans were of benefit in raising the humidity in coolers without automatic humidifiers.

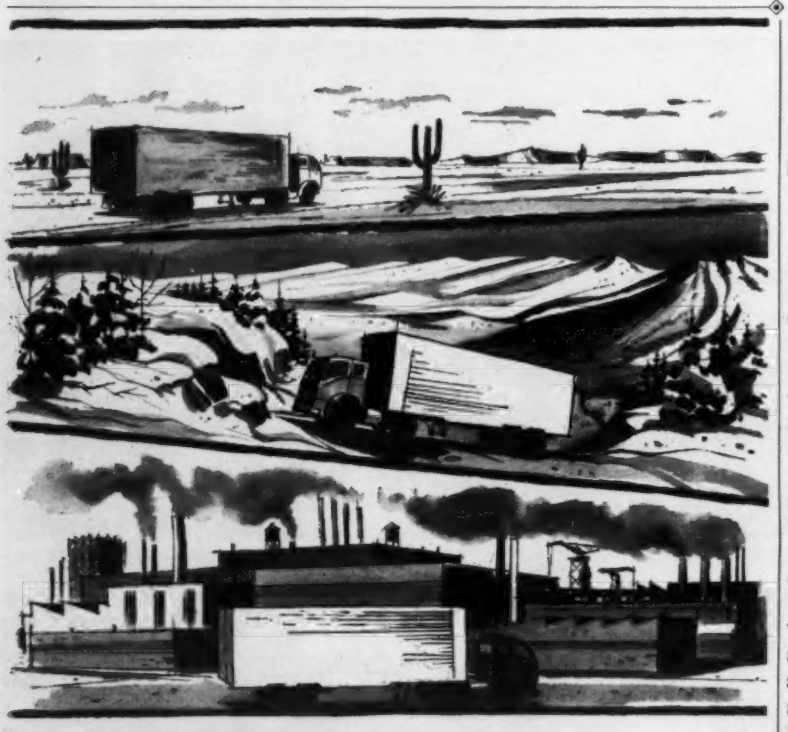
"(4) Cooler Costs—The fixed costs (interest, depreciation, maintenance) will normally be ½ or more of the total costs of cooling eggs. Hence, it is important to consider ways of reducing fixed costs, such as by:

"(a) Choosing a cooler with a low first cost,

"(b) Selecting a cooler cabinet and unit of high quality that will have long life and low annual depreciation, maintenance, and repair costs,

"(c) Avoiding selection of a cooler unnecessarily large, and thus over-investing in the cooler.

"(5) Egg Cooling Rate—For rapid cooling of eggs, maximum exposure, as in open wire baskets should be provided. Eggs should not be cased until several hours of cooling in open wire baskets have elapsed."



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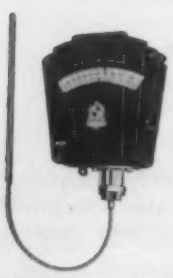
Partlow Recording Temperature Control for applications where continuous temperature record is essential.



Partlow Indicating Temperature Control for use where no temperature record is required.

controls in-transit temperatures...*and proves it*...under any road conditions!

Partlow Temperature Controls are being specified on more and more in-transit applications — because rough-road vibration and shock will not upset them . . . or lessen their accuracy! Products can be trucked through any extremes of temperature, shipped over hardest-to-haul highways — and these mercury-actuated controls will maintain their precise settings to within 1% of scale range!

Partlow Recording Controls maintain temperatures, at the same time providing a continuous temperature record, from start to destination.

Indicating and non-indicating controls also available for truck or railway transportation.

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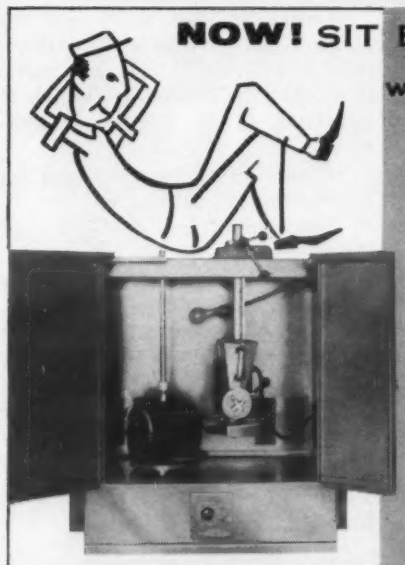

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For more information about products advertised on this page use Information Center, page 22.

2 Water Cooler Sales Contest Winners Driving a New Car Each

COLUMBUS, Ohio — Ebco Mfg. Co. here recently awarded a Nash Rambler to John J. Thennisch, distributor salesman for S. K. Culver Co., Chicago, and a Ford Thunderbird sports car to M. L. "Red" Trabue, distributor salesman for Graybar Electric Co., Columbus.

Thennisch was awarded the car at a special luncheon given in his honor at The Drake hotel in Chicago. The Rambler was top prize award in a contest conducted nationally by Ebco for Kelvinator water coolers. Ebco manufactures a full line of water coolers for Kelvinator.

Trabue received the keys to his new sports car from L. P. Benua, Ebco's vice president. The Thunderbird was top prize award in a contest conducted nationally by "Oasis," Ebco's water cooler trade name line. The award was made during open house ceremonies at Graybar's new facility in Columbus.

Aside from being known as a topnotch Oasis water cooler salesman, "Red" is well known to residents of the Ohio Valley as a sportsman, it was noted. He appears as a regular panelist on WBNS-TV's sport show, "Outdoors with Don Mack."

'Growing with America' Theme To Prod Frozen Food Packers Meeting March 2-6

WASHINGTON, D. C.— "Growing With America" will be the theme of the 1958 convention of the National Association of Frozen Food Packers, it was announced by the NAFFP Convention Committee. The convention will be held in Chicago's Conrad Hilton hotel March 2-6.

Leon C. Jones, of J. R. Simplot Co., chairman of the NAFFP Convention Committee, explained that the theme was adopted to impress on the industry that the fast-growing American market is offering frozen foods an unprecedented opportunity for increased expansion.

"The growth of frozen food sales has far outstripped other food items," Jones said, "and is well ahead of the rate of population growth. But if this is to continue at the same rate, or faster, there is going to have to be improvement in production, marketing, and management methods."

To carry out the Growing With America theme, the committee has designated Monday. Tuesday, and Wednesday as special "days."

Frozen Foods

Tiny Tube of Chemicals Changes Color To Indicate When Products Exceed Specific Temperature Long Enough To Spoil

NORTH HOLLYWOOD, Calif. —A thaw indicator that tells when and if a frozen product has exceeded a specific temperature for a long enough time to produce spoilage has been developed here by Aseptic-Thermo Indicator Co.

This tiny tube of chemicals changes color when it reaches a certain temperature. And such a device must meet rigid requirements, the manufacturer indicated.

Willard M. Huyck, ATI president, thinks his research department has come up with "all the right answers" for the indicator after a search that began in 1949. Result of their efforts is a 2-in. tube packed with a combination of chemicals and contained in a polyethylene bag.

Called "Freez-Chex," the indicator is placed in a carton just before it enters the freezer. If the carton is later exposed to temperatures above a predetermined maximum, the indicator turns from yellow to red. It can be made up in different formulas to cover the necessary range of different products.

However, ATI isn't rushing to the market with the product. Samples have been made available to frozen-food companies and criticism from the industry invited. No unfavorable comments have been received so far, Huyck said.

Requirements for the unit are that it must be infallible, be easy to use and read, must be cheap. The food industry operates on a 2-3% profit margin.

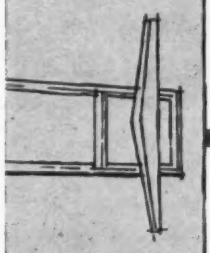
Right now Huyck estimates he can turn out the units for about a nickel apiece. However, this will probably have to be cut in half, he believes. If the price comes down, it is reported the firm won't have to worry about volume.

As one frozen-food firm official said, "If it's all they claim, they won't be able to make them fast enough."

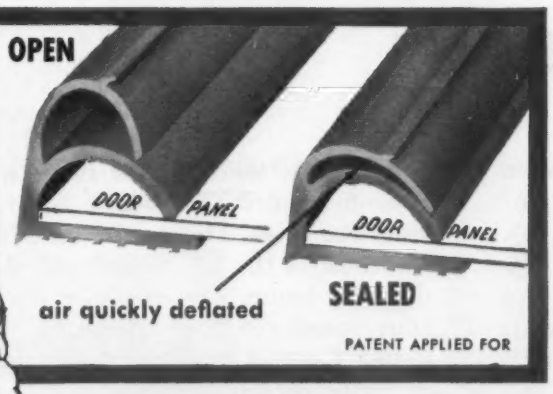
Market envisioned includes processors of all frozen products, ice cream manufacturers, owners of frozen-food lockers and home freezers, and concerns storing any products that must be maintained at low temperatures.

a light touch* AND IT'S SEALED!

Jarrow's Safeseal Gasket... developed for the new safety-type spring and magnetic refrigerator and freezer doors.



* as low as 4 lbs. pressure



Positive seal is assured with as low as 4 lbs. pressure because "Safeseal's" soft-acting rubber is sensitive to the lightest touch.

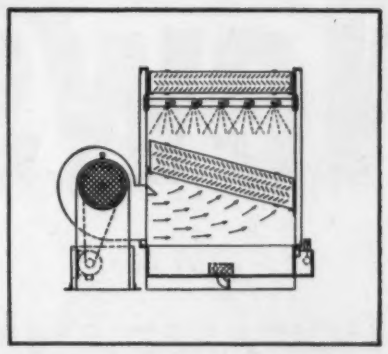
"Safeseal" can be made to your exact requirements for any low-tension spring or magnetic door, based on this patented design. Send us blueprints of your doors.

Jarrow experienced engineers can help solve your every gasket problem. No cost or obligation for this service. Write today.

JARROW PRODUCTS INC
Door Gasket Specialists for Nearly a Third of a Century
420 NORTH LA SALLE STREET • CHICAGO 10, ILL.

Be sure to stop at Jarrow Booth No. 238 at the ARI Show, November 18-21, International Amphitheater, Chicago, Illinois

...so QUIET you can install this cooling tower ANYWHERE



Cross-section showing counter-flow air-water movement employed in Binks 3-B towers.

Whisper-quiet Binks 3-B series cooling towers give you complete freedom in establishing their location. Even if conditions dictate that you must place the tower adjacent to hotel or hospital windows, in a residential courtway, or the well of an office building, you can do so with complete confidence that it will disturb no one.

Whisper-quiet operation. Tip speed of the squirrel cage blowers does not exceed 2300 ft. per min. as compared with 7000 ft. per min. or more for propeller fan units of equal capacity. Rugged cast iron blower hubs and dynamic and static balancing also insure vibrationless operation.

Low silhouette. Overall height of largest capacity tower is only 7'6"—it's seldom visible at street level.

High efficiency. Binks patented Roto-jet spray nozzles plus internal redwood nailless decking assure thorough water breakup.

Scientifically balanced air-to-water ratio gives high cooling efficiency under all climatic conditions.

Minimum maintenance. Blowers and motors are outside the tower—not in the moisture laden air stream. All panels are heavily galvanized. Outsides of towers have two coats of aluminum paint. The insides are protected by a durable zinc chromate coating.

Send for complete data. Ask your Binks Branch Office, or write direct for a copy of Bulletins 477-A and 333. Binks engineers will be glad to answer your questions and help solve your particular cooling problems. There is no obligation.

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EVERYTHING FOR WATER COOLING

See Binks NEW cooling tower line ... visit BOOTH 230
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Air-Conditioning & Refrigeration Industry
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News Show Issue

November 18, 1957

Your advertisement in the Show Issue, 10th Exposition of the Air Conditioning & Refrigeration Industry, can assure you double coverage—it will be read by those who attend the Show and those who stay at home.

FOR THOSE WHO GO . . .

Your customers and propects will use the NEWS Show Issue as a guide of what to see—where to go. They'll want to know where you are, what you are exhibiting. After the Show, they'll use the Show Issue as a "reminder" for those products and services they have seen and placed on their "must investigate" list.

If you are not exhibiting, use the NEWS for your exhibition space. But in either case, be sure to reserve your space now.

FOR THOSE WHO STAY AT HOME . . .

Your customers and prospects who cannot attend the 10th Exposition of the Air Conditioning & Refrigeration industry will use the NEWS Show Issue to learn all about it—to give them an armchair view of the entire Exposition.

For those who go and those who stay at home, the NEWS Show Issue will be must reading. There will be added distribution at the Show and added readership at home. So be sure to reserve your space for the November 18 Show Issue. Contact your local representative or write direct.

ISSUE DATE:
NOVEMBER 18

FORMS CLOSE:
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BOOTH 517

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SMI To Talk Over 'New Frontier'--Non-Foods--In Chicago Jan. 13-14

CHICAGO — The "new frontier" of the supermarket industry — non-foods business — will be discussed by members of Super Market Institute at a conference in Chicago, Jan. 13-14, Henry J. Eavey of Richmond, Ind., SMI president, announced.

The conference, sponsored by the institute's non-foods productivity committee, will provide SMI members their first opportunity to discuss the problems and profit potentials of non-foods on an organized basis, Eavey explained.

Sessions of the conference will be held in the Conrad Hilton hotel.

Non-foods items now make up about 6% of the average supermarket's volume, and there are those who foresee increased non-foods volume as the next great development in the supermarket industry, it was further pointed out.

Upright Cooler Near Checkouts Primes Market's Dairy Sales

REFRIGERATED case which stands near the checkouts in Uncle Dick's Family Market in Bargaintown, N. J. has helped stimulate dairy sales.

BARGAINTOWN, N. J.—An upright cooler adjacent to the checkout counters has greatly stimulated sales of many milk and dairy products for Uncle Dick's Family Market here.

Displayed in this upright cooler are milk, chocolate milk, cottage cheese, light and heavy cream, and related dairy products.

"Our main dairy department is located at the rear of the market. This may act as a deterrent to some shoppers in buying milk or related dairy products," explains Jim M. Collins, dairy department manager.

SHOPPERS FEEL ITEMS MAY GET TOO WARM

"Many shoppers may feel that these items may become too warm before they reach the checkouts and may forego the selection of these items. To maintain our sales volume and as a customer convenience, we have installed this cooler next to the checkout units."

We have a large sign attached to one of our dairy cases that tells the shopper that we have the same dairy products that they see in the case on display at the checkouts.

'LAST MINUTE REMINDER'

Many shoppers who overlook many of these milk and dairy products in their swing around the store add them to their order at the checkout counter. Seeing the cooler acts as a last minute reminder.

The dairy department features 32 ft. of open display case. A full line of nationally advertised dairy products are always displayed. The only pre-packaged item that the market features of its own, is sharp cheese, which Collins promotes strongly.

Collins keeps the display of his dairy cases always filled to the top. He has found that full cases stimulate a greater tendency to make a selection. Refilling the cases is a constant daily duty.

3-A Sanitary Standards Group Issues 75 Authorizations To Use 3-A Symbol

WASHINGTON, D. C.— Seventy-five authorizations to manufacturers to use the 3-A Symbol on their dairy equipment which complies with 3-A Stanitary Standards have been made public by the 3-A Sanitary Standards Symbol Administrative Council, according to a compilation issued by Dairy Industries Supply Association.

The 3-A Symbol on an item of dairy supply or equipment indicates that it was manufactured in compliance with those sanitary and engineering features deemed necessary by the 3-A Sanitary Standards Committees, and thus is acceptable to sanitarians and health officers in nearly all part of the United States, it was explained.

Included in the group to which authorizations were issued under standard 1500 for manually-operated bulk milk dispensers were American Industries, Inc.; Monitor Process Corp.; Norris Dispensers, Inc.; and United Refrigerator Co.

Under standard 1300 for farm holding and/or cooling tanks, authorizations were issued to Brown Equipment Co.; Cherry-Burrell Corp. (Cedar Rapids, Iowa); Cherry-Burrell Corp. (Little Falls, N. Y.); Craft Mfg. Co.; The Creamery Package Mfg. Co.; Dairy Equipment Co.; DeLaval Separator Co.; Girton Mfg. Co.; Groen Mfg. Co.; Haverly Equipment Div., John Wood Co.; Houston Fearless Div., Color Corp. of America; Blackburn Stainless Steel Products; C. E. Howard Corp.; Jamesway Sani-Kool Corp.; Miller Metal Products; Mojonnier Bros. Co.; Paul Mueller Co.; The Pfaudler Co.; Schweitzer's; Solar Permanent Co.; Stainless, Inc.; Emil Steinhorst & Sons, Inc.; Van-Vetter, Inc.; Whirlpool Seeger Mfg. Co.; Wilson Refrigeration, Inc.; and Zero Sales Corp.

Authorizations under standard 0101 for storage milk tanks were issued to Blackburn Stainless Steel Products; Cherry-Burrell Corp. (Little Falls, N. Y.); Chicago Stainless Equipment Co.; The Creamery Package Mfg. Co.; The J. A. Gosselin Co., Ltd.; The Heil Co.; The Pfaudler Co.; Stainless, Inc.; Stainless & Steel Products Co.; and Walker Stainless Equipment Co.

Information on specific models of the described machinery which complies with 3-A Sanitary Standards may be obtained from either the 3-A Symbol Council, 2617 Hartzell St., Evanston, Ill. or from DISA, 1145 19th St., N.W., Washington 6, D. C.

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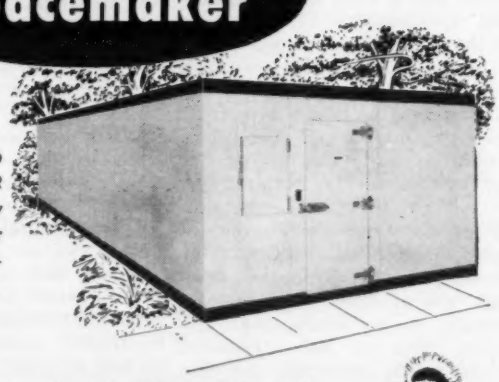

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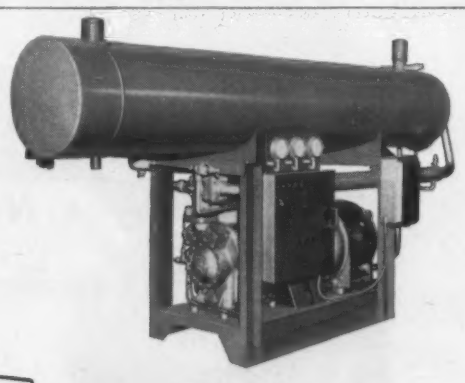

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Refrigeration Problems
And Their Solution
(As Written by Paul Reed)

The late Paul Reed, one of the refrigeration industry's most respected writers and teachers, wrote a column on "Refrigeration Problems and Their Solution" which was published regularly in AIR CONDITIONING & REFRIGERATION NEWS for more than 15 years.

Readers throughout the years have hailed this written material as some of the most practical and helpful that has ever been published. Fortunately, the author had an opportunity to revise some of this material and the NEWS is currently re-publishing it.

Pressure Drop (1)

Pressure drop is a common thief. Common, in fact far too common, but frequently unrecognized; a thief, too, for it steals performance, capacity, and the customer's money, through excessive cost of operation.

In the ordinary compression system, there is only one place where pressure drop is desirable—even necessary. To produce pressure drop, properly controlled, is the main function of the device that meters liquid refrigerant into the evaporator—the expansion valve, float valve, or capillary tube.

Pressure drop is the result of one or both of two conditions:

1. The weight of the refrigerant itself may cause pressure drop. This is of greater consequence in vertical liquid lines, but it can be sufficient to warrant consideration in long up-flow suction lines.
2. Pressure drop in either liquid or suction lines or in condensers, evaporators, or other refrigerant passages, may be caused by anything that retards the flow of the refrigerant.

Among these causes are undersize or too long pipe or tubing; restrictions such as kinks, sharp or flattened bends, undersize valves or fittings, orifices, internal fins, rough inner surfaces, or in fact anything that "crowds" or sharply diverts the flow of refrigerant.

PRESSURE DROP DUE TO STATIC HEAD

In a vertcial liquid line, the weight of the liquid in the line rests on the liquid at the bottom. At successive places up the line, the pressure due to the weight of the liquid decreases, for there is less and less liquid above to add its weight; so the pressure of the liquid at the top of the liquid line is less than that at the bottom of the liquid line. This can be said in another way; there is a drop in pressure from the bottom to the top of the line.

The weight of the liquid is sometimes called "Gravity Head," "Static Head," or "Liquid Head." It varies with the refrigerants. It is greatest for the "heavy" refrigerants and least for the "lighter," less dense refrigerants.

Table 1 shows the static heads per foot of some of the common refrigerants, and these amounts are also, of course, the pressure drop per foot due to the weight of the refrigerants.

The values are in pounds per square inch pressure for each one foot rise of the liquid refrigerant at 70°. At higher liquid temperatures, the values will be slightly less, and at lower liquid temperatures the values will be slightly more.

Table 1

Refrigerant	Static Head P.s.i. Per Foot Rise
Ammonia	.26
Carbon Dioxide	.33
Refrigerant-11	.64
Refrigerant-12	.57
Refrigerant-21	.60
Refrigerant-22	.52
Refrigerant-113	.68
Refrigerant-114	.64
Methyl Chloride	.40
Methylene Chloride	.57
Propane	.22
Sulphur Dioxide	.60
Water	.43

To determine the pressure drop due to static head in liquid lines, multiply the number of feet rise by the above values. Please note that the number of feet rise is not necessarily the length of the liquid line.

FACTORS AFFECTING LIQUID LINE PRESSURE DROP

The subject of pressure drop in the liquid line, has been discussed in Manual J-1. The following quick review may be helpful.

a. There can be no hard and fast rule as to the maximum permissible total pressure drop. Good design endeavors to keep Refrigerant-12 liquid line total pressure drop within 5 to 7 p.s.i., but this would limit liquid lines to a rise of less than 10 ft. Generously sized liquid lines rises of up to 20 ft. may be prohibitive, but care must be taken that the expansion valves on such lines are of generous size also.

b. Pressure drop in the liquid line causes some of the liquid to vaporize due to the reduction in pressure, and the resultant vapor displaces so much liquid, that the expansion valve cannot pass enough liquid refrigerant, and the coil may be starved.

Refrigerant-12 flash gas due to a static head of 20 ft. may reduce the valve capacity about one fifth; for 40 ft. about one third.

c. The lower pressure of the liquid refrigerant as it arrives at the expansion valve inlet further reduces the capacity of the valve, for the pressure difference across the orifice of the valve is reduced.

d. Sub-cooling the liquid refrigerant to a saturation temperature corresponding to the reduced pressure at which the liquid arrives at the valve, will prevent the liquid from vaporizing and causing "flash gas" in the liquid line ahead of the expansion valve.

e. Loss of valve capacity due to reduction in the pressure of the liquid refrigerant at the inlet of the valve, may be offset by raising the condensing pressure as many p.s.i. as the pressure drop, so as to get it back up to the pressure of the liquid at the bottom of the liquid line.

This may be done by partially blocking the air flow through air-cooled condensers, and by reducing the rate of water flow through water-cooled condensers by adjusting the water control valve.

f. Raising the head pressure does not eliminate the pressure drop itself nor the formation of flash gas, but it does help in maintaining the capacity of the valve. Even then, the valve may prove to be too small due to the flash gas in the liquid to the valve. Flash gas in the liquid line may be trapped and purged through a by-pass to the suction line as described in Chapter 11, Manual J-1.

g. One of the most common causes of excessive pressure drop in liquid lines is a clogged drier or strainer. The pressure drop through one of these may be and frequently is, so much that the restrictor acts as an expansion valve, and the line beyond the restriction is chilled enough that it can be determined by the feel of the hand.

Bubbles in the sight glass are usually flash gas, caused by pressure drop or by the liquid refrigerant becoming heated to a temperature above the saturation temperature of the refrigerant corresponding to its pressure.

The total pressure drop in the liquid line consists of the pressure drop due to the weight of the liquid and to the restrictions and other conditions that retard the flow of the liquid.

Therefore, the pressure drop is due to static head, added to that due to restrictions, etc., gives the total liquid line pressure drop, and it is advisable that this be kept under 5% is possible, which for Refrigerant-12 is from 5 to 7 p.s.i.

The actual pressure drop can be determined by installing a high-pressure gauge in a tee just ahead of the expansion valve and comparing its reading with that of a similar gauge installed in a tee in the liquid line at the outlet of the receiver. The difference in readings is the pressure drop. Care should be taken that both gauges are accurate and zeroed together at atmospheric pressure. If the pressure drop through the condenser is negligible, the head pressure may be used instead of the pressure at the receiver outlet.

The Air Conditioning and Refrigerating Machinery Association (ACRMA) in its "Equipment Standard" states that liquid Refrigerant-12 flow through the liquid line should be at velocities below 300 f.p.m.

Table 2 is taken from this data, and is based on 300 f.p.m. velocity and a total maximum pressure drop of 5 p.s.i. in a liquid line of 100 ft. equivalent, and on a 25° evaporator and with 105° condensing. The 5 p.s.i. should include the static head; but as a maximum, an additional 2 p.s.i. may be allowed, or a total of 7 p.s.i. pressure drop.

Table 2

Refrigerant-12 Liquid Line Sizes

Line Size Inches	Capacity In Tons Per 24 Hrs.
⅜ OD	1.14
½ OD	3.64
½ IPS	6.81
⅝ OD	6.81
¾ IPS	12.6
⅞ OD	14.1
1 IPS	28.2
1⅛ OD	28.2
1¼ IPS	48.1
1⅜ OD	48.1

OD—outside diameter, type L, copper tube.

IPS—nominal size, extra heavy pipe.

Since elbows, tees, etc., cause considerable pressure drop, they must be considered, and their total equivalent pressure drop in terms of feet of pipe subtracted from the 100 ft. Thus a 50-ft. line with a number of fittings, may be equivalent in pressure drop to 100 ft. of horizontal line without fittings or restrictions.

(To Be Continued)

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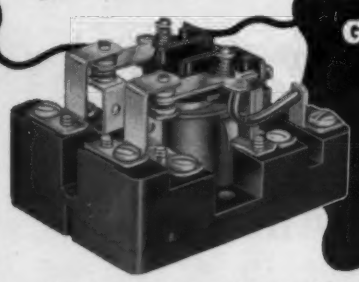


GUARDIAN 25 AMPERE Interchangeable Coil POWER RELAY

Listed and Approved by Underwriters' Laboratories

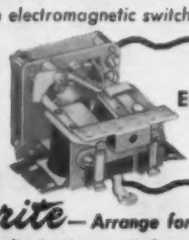
Control more power in less space with this new Guardian 25 AMPERE A.C. Power Relay for motor starting, heater loads and other heavy duty applications. Standard unit has double pole, double throw contacts rated at 25 amperes continuous duty, 230 volts A.C., with 75% power factor. Operating power requirement is 9.5 VA.; coil drain approximately .080 amperes at 115 volts, 60 cycles. Two easily accessible screws permit removal and replacement of completely *interchangeable* coil assemblies rated at 6 V.-24 V.-115 V.-or 230 V., A.C. Relay measures 3⅜" x 2½" x 2⅛", weighs 11 oz.

The GUARDIAN POWERLOID*

Designed and Tested for 230 V., A.C. Loads up to 3 H.P. Motors and 8400 Watt Heater Loads

A Guardian original—this new POWERLOID offers definite advantages which are far ahead of anything being offered for the electromagnetic control of motors and heater units. Available in a variety of contact combinations. Rugged, totally enclosed . . . low priced!

**An electromagnetic switch actuated by a solenoid plunger.*



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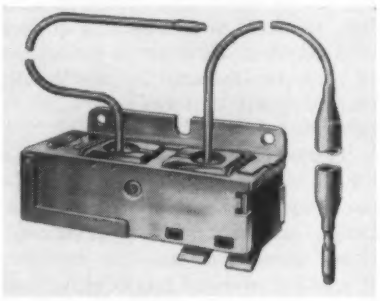
For more information about products advertised on this page use Information Center, page 22.

Develops Heat Pump De-Icing Control Claimed To Remove Ice In 3-5 Minutes

COLUMBUS, Ohio — A new automatic de-icer control, designed to serve as part of the control-and-valve system offering automatic operation of a heat pump, has been introduced by Ranco Inc., James Manecke, sales and advertising manager for the company, announced recently.



AUTOMATIC de-icer controls (D-50 shown and D-52) are part of the newly-designed control-and-valve system introduced by Ranco Inc., Columbus, Ohio, offering fully automatic operation of a heat pump in both heating and cooling phases.

"The new D50 and D52 De-Icer Controls were developed to give positive, reliable, and definite de-icing," Manecke said. "Used in conjunction with newly-introduced Ranco V25 and V26 slide-type reversing valves and the Ranco C17 Control which actuates the system according to temperature demands in both heating and cooling cycles, the new de-icer will find ready and wide applications in the rapidly-expanding heat pump field."

Operation of the control is based upon increases of temperature differential between outside ambient air and outside coil temperature when an ice blanket is formed on the coil as compared to a clear coil.

"Two capillary tubes make possible mounting in a weather-protected chamber with the tubes extending outside the compartment—one in the ambient air stream, the other with a sensing bulb for attaching to an end bend at the middle of the outside coil," it was explained.

"De-icing occurs as the sensing bulb and the ambient air capillary react to the lowered temperature of refrigerant in the outside coils and the ambient air stream during the heating phase. A rocker arm in the control opens the switch which stops the outside fan and causes a slide-type reversing valve to position for transferring heat from the unit to the outside coil.

"Ice is completely removed in 3-5 minutes, the temperature increase expands the sensing bellows, closes switch, and terminates the de-icing cycle. Unit then is automatically in the heating phase.

"The ambient air power element has a limited charge which immobilizes the de-icer at ambients above 48° F. permitting fan operation through the de-icer control for the cooling phase. The bulb-equipped capillary is cross ambient charged to insure control at the outside coil at all times. The switch action of the D50 is single pole, single throw. The D52 is single pole, double throw."

The de-icer is planned for operation with the new V25 and V26 slide-type reversing valves and the C17 cycling control thermostat, all designed by Ranco.

With these components, a system will have completely automatic de-icing and cycling control for both window units and central systems, it was stated. Varied wiring schemes permit automatic control of strip and step heaters with the same components used for the heat pump.

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For your copy, clip this ad and mail with name and address to: Air Conditioning & Refrigeration News, 450 W. Fort, Detroit 26, Mich.

Iron-Guard Diffusers!

Year-Round Cooling Comforts Sheriff's Prisoners In California

LOS ANGELES—The Detention Area (jail cells!) at the new West Hollywood Sheriff's Station here is air conditioned year-round.

But it took some on-the-spot ingenuity to "client comfortize" the new facility, according to Drayer-Hanson national sales manager Fred E. Schmuck.

The main system, a multizone type central-plant unit set in the basement air conditioning equipment room, distributes conditioned air to the entire building —and each cell—through standard Tuttle & Bailey ceiling grilles.

Problem facing mechanical engineer and installers on the job, says Schmuck, "was the fact that ceiling diffuser-type outlets provide tailor-made escape hatches!"

Through a joint construction effort, cell occupants at this facility find themselves slightly stalemated, however. Mechanical engineer on the job, Fred Schwartz, devised a built-up protective steel plate covering to iron-guard the diffusers.

Constructed on the spot by AC contractors Hugh Robinson & Sons, the devices consist of stamped, perforated 3/16 in. plates, set in place with tamper-proof screws and bedded in concrete.

This security phase constituted the bulk of headaches on the job, according to Schmuck. With the trend toward packages, a six-zone D-H "Flexazone" system was set to furnish heating and cooling, ventilating, and filtering to all areas.

An exhaust unit, D-H AM, is set above the supply unit to recirculate air. It was utilized because of low headroom. Auxiliary equipment is 25-ton Chrysler Airtemp compressor; a 3,600 B.t.u. output Ajax boiler. A D-H evaporative condenser rounds out the system.

Project architect was Burnett C. Turner, A.I.A., with Air Conditioning Supply Co., Los Angeles, representing Drayer-Hanson.

Russian Auto To Be Cooled

LONDON, Eng.—New Zis-111 luxury automobile to be made in Moscow's Likhachev automotive plant will be air conditioned, Moscow radio reported.

It will also have what was termed a "comfortable speed" of 105 m.p.h.

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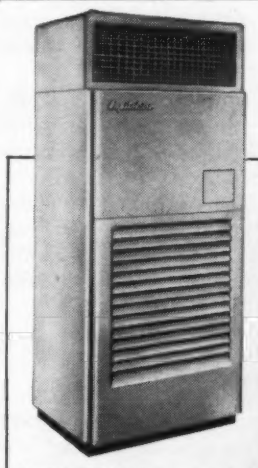
• Industrial

Air Conditioning Products

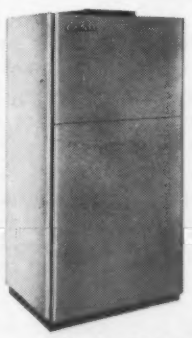


Model COM Commercial Air Conditioner 3 & 5 ton—Water & Air Cooled

Model CF Flat Coil with Remote Air-Cooled Condensing Unit

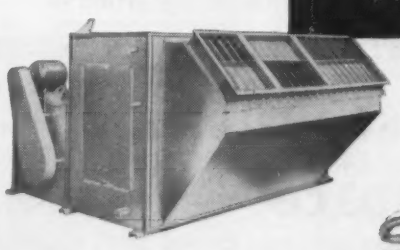
Model VER Fan-Coil Units 200,300,400, & 600 CFM

Model VRS Fan-Coil Unit Summer Cooling—Winter Heating

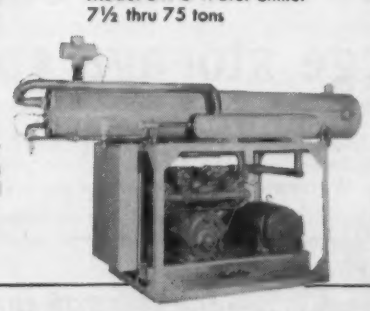


Model RES Residential Air Conditioner Air Cooled —3 & 5 ton

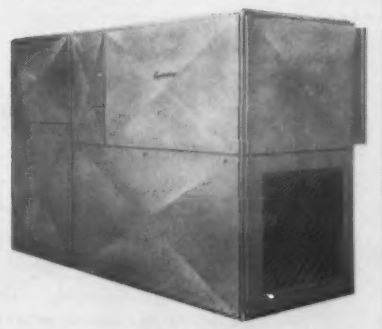
Model RES Residential Air Conditioner 3 & 5 ton Water Cooled



Flexazone Horizontal Model Air Conditioner for multi-room applications. CFM capacities from 1800 to 24,000. Vertical model available.



Model CWG Water Chiller 7½ thru 75 tons



Model AECR Air Conditioner with Built-in Evaporative Condenser 7½ thru 60 tons. Also available as water cooled.

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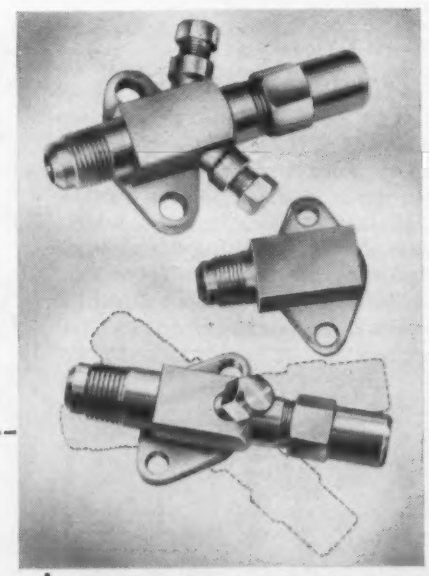

Swivel Pad Valves may be set at an angle to correspond with tubing . . . Ideal for Automotive Air Conditioning Systems where space limitations exist.

All Pad Valves feature the Primore exclusive, a specially designed flange with a high unit pressure seal-off pad.

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REFRIGERATION designing sales engineering

DESICCANTS AND DRIERS

Part 6—The Drier In The Line

By Frank Versagi

Before getting into a discussion of the total function of the drier cartridge and desiccant, let's consider what can happen to the desiccant itself once it is on an actual unit. We will talk about the common liquid line location—high side.

Most servicemen have noticed that driers heat up when the refrigerant is first allowed to flow through them, and many have suspected that this heating meant that the refrigerant was very wet, since desiccants do get hot when they pick up water. Most often, however, the refrigerant is not wet, at least not **that** wet.

Here's what actually happens. Physical type desiccants, like silica gel and activated alumina, will adsorb most liquids to some degree. They will adsorb dry refrigerants. (Later, when any water is picked up, the water displaces the refrigerant in the desiccant.)

Whenever **any** liquid is adsorbed, a certain amount of heat is generated by the physical, partially electrical action taking place. This heat is called the **heat of wetting,** even though water may not be involved.

If the refrigerant is very slowly bled into a newly installed drier, the actual temperature rise can be kept very low. If the refrigerant is charged rapidly, the drier will feel very warm to the touch.

As soon as the refrigerant contacts the desiccant, the desiccant begins to remove any moisture present. However, all normal systems carry a little oil along with the refrigerant. The desiccant will begin to become coated with this oil as the liquid circulates and recirculates. Driers which have been in service for several months may show over 15% oil on the desiccant when opened.

Does Oil Destroy Desiccant's Ability

What effect has this oil on the desiccant? Does it destroy the desiccant's water removing ability?

Actually not. If the oil is not highly decomposed because something is wrong in the unit, it will merely form a layer on the outer surfaces of the desiccant. This coating will reduce the **speed** with which the desiccant can remove moisture, but it will **not** reduce the **total water capacity** of the desiccant.

Just to make up an example, suppose a clean drier was able to pick up 550 p.p.m. of moisture from a unit in eight hours of operation. That same drier, with the desiccant coated with oil, would still remove 550 p.p.m. of moisture, but it might take 10 hours instead of eight.

Why It Takes So Long To Remove Moisture

While we're talking about hours to remove moisture, we might explain why it takes so long. Actually, the first moist refrigerant which passes over a new desiccant becomes almost bone dry. But, this dry refrigerant, after passing through the evaporator, joins the main body of the refrigerant in the receiver. Since the refrigerant in the receiver has not yet been in contact with the desiccant, it is still wet.

The mixture of wet refrigerant and that which has passed through the drier then travels through the drier. As this process continues, the refrigerant in the receiver becomes drier and drier, but it may take several passages of the entire refrigerant load to get the moisture in the unit down to safe operating levels.

For this reason, the slightly reduced efficiency of oil-covered desiccant is not harmful, so long as the total adsorptive capacity remains.

Not only is a desiccant exposed to refrigerant, moisture, and oil, but it will come into contact with any liquid or solid substances being carried along with the flow.

Thus it is not unusual to see a desiccant covered with or mixed with rust, iron or copper filings or cuttings, sludges, and lint. Indeed, it is possible to get a good idea of what is going on in a particular unit by analyzing the products which the desiccant has adsorbed or trapped.

Then there are the liquids which can be taken up by the desiccant. These liquids can be those added for a purpose or those generated in the system. If methyl alcohol has been added as an anti-freeze, for example, its effectiveness will be reduced or eliminated if a drier is put on the line since the desiccant will pick up the alcohol as it does water.

Use of colored dyes to detect leaks is another thing which is affected by a drier. If the leak is not detected during the first few passages of the refrigerant, the dye will be adsorbed by the desiccant and will no longer be visible in the refrigerant stream.

This knowledge can be put to use during trouble shooting. Sometimes, when a unit has developed a big leak and is very, very wet, a liquid type desiccant is put into the unit. A drier cut into the line will then remove any excess liquid desiccant and most chemical products developed during its use.

Sometimes, of course, acid can be formed within the unit even if nothing is added. When we discussed the individual desiccants, we mentioned that some are more effective acid removers than others. Those that will remove acid will hold on to it so long as they have any adsorption capacity left.

Some tests have shown that a desiccant completely full of acid will give up some acid and take up water instead if moisture appears. Other tests have shown that the desiccant will give up water to pick up acid. It is not certain yet under what conditions each of these things happens in a practical refrigeration unit.

So we see that the desiccant performs several functions other than water pick-up once it is actually on a unit.

Want Driers To Perform Cleaning Job

And even beyond this, there is the fact that most servicemen want more than a moisture remover in a drier. They want a cleaning system, a unit which will remove anything which may harm the system in any way.

For this reason, normal desiccants have been shaped and reshaped; they have been cored and briquetted; they have been contained in metal screens, felt pads, nylon bags, and glass cloth. Driers have been designed to give through-flow, surface flow, T-flow. All this with the intent of removing as much as can be removed from a system without causing too great a pressure drop.

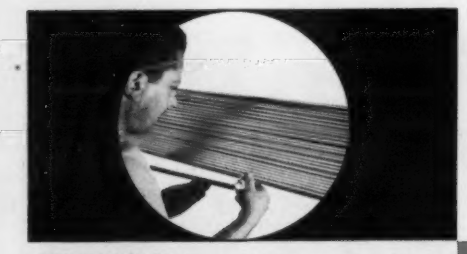
The over-all design of the entire drier, of course, determines whether the advantages of a good desiccant are to be lost because of poor filtering or excessive pressure drop.

Basically, all driers are pretty much alike. A metal shell containing desiccant, some sort of mechanical filters at the inlet and/or outlet end, and fitted ends for adapting to the lines.

But such a simple basic design can be abused or misused enough that the drier does not perform its total function.

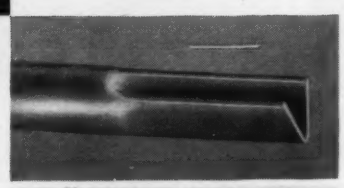
Experienced servicemen have encountered driers which did such an effective job of filtering at the inlet end that the filter became clogged and the pressure drop became excessive months before the drier had a chance to pick up its capacity of water.

(To Be Continued)

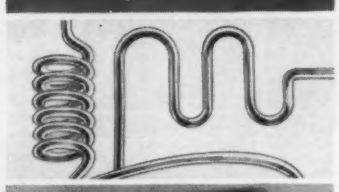


For every Refrigeration Need there's a

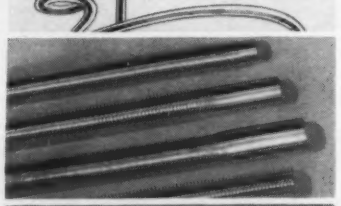
UNITED TUBE



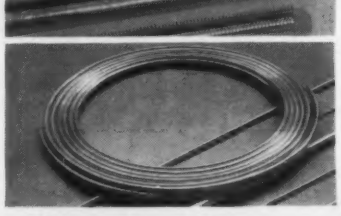
REFRIGERATION TUBE: more of the most wanted features. Every coil, every length of UDD* copper tubing is individually checked for leaks, temper, cleanliness, size, gauge length and inside perfection. New UDD* V-type seals maintain moisture-free, clean, mirror-like inside surface . . . have same diameter of tube for easy passage through openings. **United Deoxidized Dehydrated*



CAPILLARY TUBE: precision-made for trouble-free installation. Custom-built to your specifications in copper or aluminum. United holds the smallest diameters to precise tolerances. Copper restrictor tubing is washed, flow-tested, and ends are deburred. Furnished, coiled or cut to length.



UNITED-FIN COPPER TUBE: rugged, dependable on *any* job. An integral fin tube, its fins are *part* of the tube and are not effected by changes of pressure, temperature or vibration. In straight lengths cut to your specifications, United-fin tube is available in a variety of tube sizes and fins per inch.



UNITED SEAMLESS ALUMINUM TUBE: fills the bill on any coiled tube application. United's all-purpose aluminum tube is packaged in ten 50' coils to a carton or in straight lengths from ½" to 20'. Available in twelve sizes, 3003-0 alloy, United Aluminum tube has uniform soft temper that makes it readily flared, manually or mechanically. A leak-proof coil (air pressure tested under water) United aluminum tube is suitable for any coiled tube application.

For every brazing need there is a United L.T.* Alloy.

For mass production or single purpose jobs . . . you braze best with United's low-temperature Phoson or Sil-Bond and Sil-Flux. For dependable metal joining with the *highest* possible strength and *lowest* practical temperatures, specify United Phoson or Sil-Bond with Sil-Flux. Available at your local jobber or direct from mill. ** L.T. — Low Temperature*

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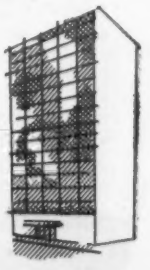

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HAMILTON HOTEL
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"Preferred by guests in CHICAGO"
CHICAGO

KRACK coolers end defrost problem . . . enlarge storage space

for Merchants Wholesale Grocery Co., Louisville

Electric defrost—automatically closes air intake-discharge door, turns off the refrigerant line and actuates electric heaters. Warm air is recycled within the unit.

More storage space—mounts on ceiling and both air intake and discharge are located at the front. Produce can be stacked higher without blocking air circulation.

Choose from 6 models for Freon, ammonia or brine.

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KRACK 25th ANNIVERSARY MODEL

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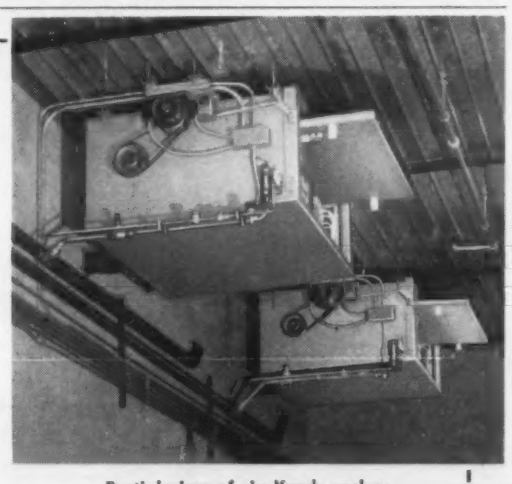

Partial view of six Krack coolers installed by York Louisville Co.

Compressors--

(Concluded from Page 1, Col. 2)

units, which dropped from 309,123 in the 1956 period to 67,443 in 1957.

Almost 3 Million Bodies Shipped In First 7 Months

Total shipments for seven months this year were 2,999,491 bodies, compared with 3,176,229 in 1956. July shipments of all categories were 288,811 units this year, against 368,274 last year.

The 1957 figures, along with the names of the reporting companies, are shown in the following tabulation.

MANUFACTURERS' SHIPMENTS OF COMPRESSOR BODIES PRODUCED BY REPORTING COMPANIES
(Except for household refrigerators)

	Shipments Including Exports	
Horsepower*	**July, 1957**	**Jan.-July, 1957**
⅕ & under	36,795	293,138
¼	68,622	485,250
⅓	23,118	150,443
½	10,386	67,443
¾	10,210	335,929
1	41,110	760,833
1½	15,889	195,144
2	15,901	179,051
3	8,781	75,028
5	5,828	55,734
7½	2,955	33,508
10	630	7,863
15	389	2,381
20	152	1,479
25	135	1,223
30 & over	716	4,551
Total	**241,617**	**2,618,998**
For Ammonia Refrigerant—Total	116	913
For Automotive Air Conditioning—Total	47,078	349,580
Grand Total	**288,811**	**2,999,491**

*For all refrigerants **except** ammonia (excluding units for automotive air conditioning).

This summary includes all compressor bodies shipped by the reporting companies **regardless** of whether they were shipped separately or incorporated into a condensing unit or unitary end-use product (such as a room air conditioner, display case, freezer, or commercial refrigerator). Shipments for export are included. Shipments for household refrigerators are **not** included.

In order to avoid duplication of reporting, shipment figures were requested only from companies that assembled the machined compressor casting with the components necessary to make a complete compressor or motor-compressor assembly.

Reporting companies: Airtemp Div., Chrysler Corp.; Bendix-Westinghouse Automotive Airbrake Co.; Brunner Div., The, Dunham-Bush, Inc.; Carrier Corp.; Copeland Refrigeration Corp.; Curtis Mfg. Co., Refrigeration Div.; Frick Co., Inc.; Frigidaire Div., General Motors Corp.; General Electric Co.; Kelvinator Div., American Motors Corp.; Lehigh, Inc.; Tecumseh Products Co.; Trane Co., The; Vilter Mfg. Co.; Westinghouse Electric Corp.; Worthington Corp.; York Div., Borg-Warner Corp.

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Only 25¢ each.

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THERMAL PROTECTORS
UL
FOR MOTOR OVERLOAD PROTECTION
MECHANICAL INDUSTRIES PRODUCTION COMPANY
223 ASH STREET • AKRON, OHIO

Expect 15,000 at ARI Show--

(Concluded from Page 1, Col. 5)

ucts, and talk to factory representatives.

R. H. Israel, chairman of the exposition committee, said, "We believe there is more interest in this exposition on the part of exhibitors and visitors than any we have every experienced before. We look forward to an attendance of 15,000 buyers and the most successful show of its kind ever held anywhere."

Public Invited

For the first time in show history, the public will be invited to view the displays. They will be admitted on the final day of the show only.

Preview briefs of products to be exhibited at the Exposition are being published in this and the next two issues of the NEWS. Briefs in this issue are devoted primarily to commercial refrigeration displays. The Nov. 4 issue will cover air conditioning equipment, and the Nov. 11 issue parts and supplies.

Anyone actively engaged in the refrigeration and air conditioning industry or anyone with an interest in the purchase and use of industry products will be admitted upon registration at the Amphitheatre.

Visitors can register after 9 a.m. any day, including the Saturday and Sunday preceding the show.

Make Reservations

Those planning to attend the show are urged to make their hotel reservations at once, if they have not already done so.

The nine associations holding conventions and meetings in conjunction with the show are providing facilities through which their members can register at their headquarters hotels.

Others may obtain some assistance by writing to the Housing Bureau, 10th Exposition of the Air Conditioning and Refrigeration Industry, 134 N. LaSalle St., Chicago. Letter should give full information on type of accommodations desired and proposed length of stay.

Activities by Associations

Association activities scheduled around the Exposition dates are:

Air-Conditioning & Refrigeration Institute, headquartering in Sherman hotel, will hold a board of directors meeting there Sunday, Nov. 17 and committee meetings on Wednesday and Thursday in the Congress hotel.

Air Conditioning & Refrigeration Wholesalers will hold its 12th annual convention in the Morrison hotel Sunday and Monday, Nov. 17 and 18. Committee and directors' meetings are scheduled for the preceding Thursday, Friday, and Saturday.

American Society of Refrigerating Engineers will stage its 44th semiannual convention in the Shoreland hotel. Committee and directors meetings are scheduled for Tuesday and Wednesday, Nov. 12 and 13 and technical sessions for Thursday through Saturday, Nov. 14-16.

National Association of Practical Refrigerating Engineers will convene for the 44th year at the Del Prado hotel, Monday through Thursday, Nov. 18-21.

National Commercial Refrigerator Sales Association will headquarter at the LaSalle hotel and stage its 11th annual convention on Monday and Tuesday, Nov. 18 and 19, with committee and board of directors meetings on Sunday, Nov. 17.

National Heating & Airconditioning Wholesalers, Inc. will meet in the Morrison hotel and spread its 11th annual convention over three days, Nov. 18 to 20. Board of directors will gather on Sunday, Nov. 17.

National Warm Air Heating & Air Conditioning Contractors Association stages its 44th annual convention Thursday and Friday, Nov. 21 and 22 in the Morrison hotel with committee meetings preceding it on Tuesday and Wednesday.

Refrigeration & Air Conditioning Contractors Association headquarters in the Drake hotel for its 12th annual convention Nov. 17 through Nov. 19.

Refrigeration Service Engineers Society stops at the Morrison hotel for its 20th annual convention Nov. 16 to 19, with the board of directors getting in a day's work on Nov. 15.

Shuttle Bus Service

Shuttle bus service connecting major "Loop" hotels with the International Amphitheatre is being provided by the Marsh Instrument Co.

Anyone wishing further details on the Exposition not covered in this issue can write to:

10th Exposition of the Air Conditioning and Refrigeration Industry, 1346 Connecticut Ave., N.W., Washington 6, D. C.

Harry D. Wagner Dies

CLEVELAND—Harry David Wagner, president of Wagner Refrigeration Service, died recently in St. Luke's hospital. He was 59.

Airtemp Names Call Merchandising Mgr.

DAYTON — Appointment of Leonard M. Call as merchandising manager for the Airtemp Div. of Chrysler Corp. was announced here.

L. M. Call

Call joins the staff of M. B. Smith, Airtemp director of sales planning. As merchandising manager, he will head all advertising and sales promotion activities pertaining to room air conditioners, commercial cooling equipment, and residential air conditioning products.

Call was formerly assistant advertising and sales promotion manager for the General Electric Air Conditioning Div., Bloomfield, N. J., it was explained.

At White Castle, Employee Comfort Comes First

Locker rooms have long been noted for one distressing—and unnecessary—thing: They smell like locker rooms!

Not so at that famous sign of good eating, however—White Castle assures employee comfort with Barnebey-Cheney canister purifiers in locker and dressing rooms. White Castle is installing these compact air fresheners to remove odors, keep these rooms fresh and pleasant at all times. They are finding this pays off in better employee efficiency and morale, less turnover.

Write for our catalog and technical literature on applying activated charcoal air purification to odor control problems, any type, any size.

Activated Charcoal Air Purification is a Business Builder

Please send your catalog on applying activated charcoal air purification. ACRN 1028

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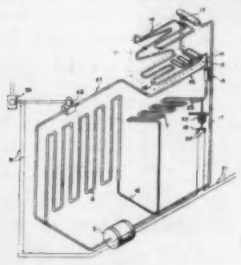
PATENTS

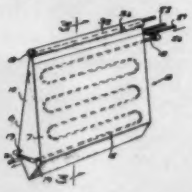
Week of September 10

2,805,555. HOT GAS DEFROST SYSTEM. Frank A. Schumacher, Louisville, Ky., assignor to General Electric Co.



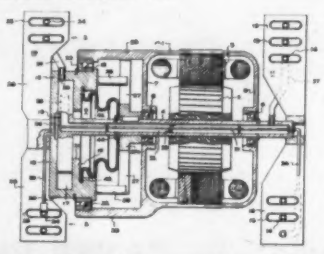
3. A refrigerating system comprising a compressor, a condenser, a first flow restricting element, a high temperature evaporator for cooling a fresh food compartment, a second flow restricting element having a lesser restrictive value than said first element, a flooded low temperature evaporator for maintaining a frozen food compartment at sub-freezing temperatures, said compressor, condenser, first flow restricting element, high temperature evaporator, second flow restricting element and low temperature evaporator being connected in series in a closed refrigerating circuit, control means responsive to the temperature of said high evaporator has attained a temperature above freezing to assure defrosting of said high temperature evaporator prior to energization of said compressor and means for periodically defrosting said low temperature evaporator including a conduit bypassing said condenser, first flow restricting element and high temperature evaporator and connecting said compressor to the inlet to said second element for the introduction of hot gas into said low temperature evaporator, said second element including an injector for effecting circulation of refrigerant in said flooded low temperature evaporator, a valve in said conduit controlling the flow of refrigerant through said conduit, control means for controlling the operation of said valve and energizing said compressor when said valve is open, said second restrictive element having restrictive valve sufficient to load said compressor and thereby increase the amount of heat available in the hot gas for defrosting said low temperature evaporator.

2,805,557. ICE MAKING UNIT. Raymond G. Hilger, Chicago, Ill.



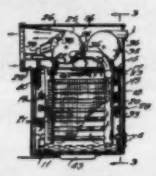
1. A refrigerating unit comprising, in combination, a pair of sheet metal side wall members of substantial area disposed in oppositely inclined intersecting planes, means defining a continuous channel intimately and continuously associated with the inner face of each member and disposed so as to chill the entire surface of the member sufficiently to form ice on its outer face when a refrigerant is circulated through the channel, top, bottom, and end members assembled with and joined to said side members to define a liquid-tight chamber between the side members completely isolated from said channel, said top and bottom members comprising V-shaped metal stampings having their edge portions joining the respective upper and lower edge portions of the side members in a continuous liquid-tight joint, a header supported adjacent the top member for directing liquid to be cooled over the side wall members in a relatively thin film, one of said end members having inlet and outlet ports communicating with said chamber for introducing and withdrawing therefrom a fluid defrosting medium effective to raise the temperature of the members above the freezing point, said side wall members presenting smooth, steeply sloping outer faces from which accumulated ice can fall freely upon introduction of the defrosting medium to said chamber.

2,805,558. REFRIGERATING APPARATUS INCLUDING ROTATING HEAT EXHANGERS. James L. Knight, Louisville, Ky., assignor to General Electric Co.



1. Refrigerating apparatus comprising a motor having a shaft, a cylinder member forming a pumping chamber, a pumping member positioned within said pumping chamber, means rotatably mounting said members one on the axis of said shaft and the other about an axis offset from and parallel to said first axis, at least one reciprocating blade mounted on one of said members and engaging the other of said members, means for driving both of said members from said shaft thereby to effect a pumping action in said pumping chamber, a first heat exchanger mounted on said cylinder member for rotation therewith, a second heat exchanger mounted on said shaft for rotation therewith, one of said heat exchangers being connected to the inlet of said pumping chamber and the other of said heat exchangers being connected to the outlet of said pumping chamber, and means connecting together said heat exchangers whereby said unit operates as a complete closed refrigerating system with rotating heat exchangers.

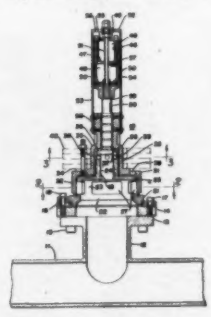
2,805,559. AIR CONDITIONING APPARATUS. Samuel A. B. Hamilton, Fort Worth, Texas.



1. In an air conditioner device having a housing and a reservoir therein, in combination, an air inlet manifold in said housing having a plurality of vertical laterally spaced air inlet tubes connected therein, a plurality of air discharge tubes opposing said inlet tubes and connected thereto by horizontally arranged and vertically spaced air flow tubes, an air discharge manifold connecting the upper ends of said air discharge tubes, a discharge duct connected to said discharge manifold and having a suction fan therein, means in said housing for circulating a cooling liquid over said tubes therein, a refrigerating coil in said discharge duct for reducing the moisture content of air passing therethrough, and means comprising absorbent pads in said housing for cooling said tubes by evaporation.

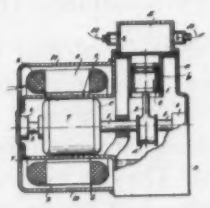
2,805,681. PRESSURE RELIEF VALVE. Alfred C. English, Forest Hills, N. Y., and Joseph E. Whitfield, Erie, Pa., assignors, by mesne assignments, to Ingersoll-Rand Co.

A pressure relief valve comprising a valve body having a communicating lower and upper chamber defined respectively by upright coaxial cylindrical walls, the upper of said cylindrical walls having a substantially smaller diameter than said lower cylindrical wall, an annular horizontal wall connecting the upper and lower peripheral edges, respectively, of said lower and



upper cylindrical walls, a top wall closing the upper end of said upper cylindrical wall, the lower end of said lower cylindrical wall being open to form a pressure fluid intake port, said lower cylindrical wall being provided with openings to form exhaust ports, a valve member having upper and lower cylindrical walls in telescopic relation with the upper and lower cylindrical walls of said valve body, having an annular horizontal wall connecting the upper and lower peripheral edges, respectively, of said lower and upper cylindrical walls of said valve member and overlying the said annular horizontal wall of said valve body, the upper end of the upper cylindrical wall of said valve member having a horizontal wall forming a working surface in overlying spaced relation with the top wall of the upper cylindrical valve body wall, the upper cylindrical valve body wall having therein laterally directed port means, a passage between said upper cylindrical valve body and valve member walls providing communication between said laterally directed port means and the said working surface of said valve member for deliving pressure fluid to the said working surface to raise said valve member to expose the exhaust port in the lower cylindrical valve body wall, and a vent port extending through the said annular horizontal wall of said valve member for venting to atmosphere pressure fluid leakage to said annular horizontal wall through the clearances between the telescoping walls of said valve body and valve member to prevent said pressure fluid leakage from exerting a lifting force against said annular horizontal wall and thereby against said valve member.

2,805,817. ARMORED COMPRESSOR FOR REFRIGERATING EQUIPMENT. Luis Priggeri, Buenos Aires, Argentina.



An electric motor-operated armored compressor for refrigerating equipment comprising a housing having a cylinder and a piston operable therein, axially-aligned bearings in said housing, a shaft journaled in said bearings, an eccentric on said shaft, a piston rod operated by said eccentric and connected to said piston, a valve chamber mounted on said housing above said cylinder, an electric rotor fixed to said shaft, said housing having a thin wall extension integrally formed thereon, said extension concentric with and enclosing said rotor and being in fluid communication with the cylinder part of the housing, one of said bearings being mounted on the outer end of said extension, a stator slide fitted upon the integral extension and a dust-proof cover slide fitted upon said integral extension and over said stator.

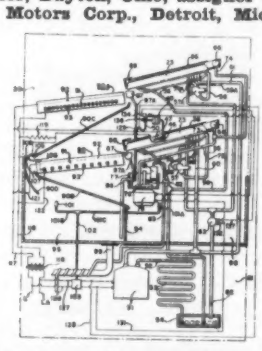
Editor's Note: Patents described here have been selected from the "Official Gazette" of the United States Patent Office. They offer only a brief summary of each invention. In some instances only the first part of the digest is presented.

Printed copies of patents, reissued patents, and patent designs may be secured from the Patent Office; patents and reissues are 25¢ each, while designs are furnished at 10¢ each. Copies should be ordered by number and title and a mention of the fact if they are either Designs or Reissues.

Address orders to: Commissioner of Patents, Washington 25, D. C.

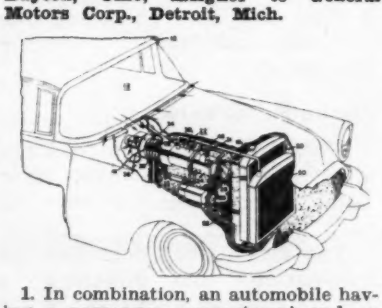
Week of September 17

2,806,357. ICE MAKER. Joseph R. Pichler, Dayton, Ohio, assignor to General Motors Corp., Detroit, Mich.



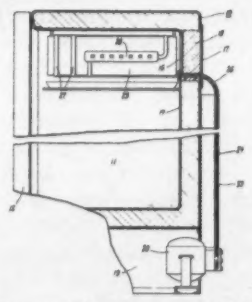
1. An ice making apparatus including a cabinet with a chamber therein and of the type capable of simultaneously producing a plurality of separate batches of ice blocks in spaced apart superimposed communicating zones in said chamber comprising, an inclined plate disposed in each of said zones in said chamber, means for flowing water across each of said plates, means for refrigerating said plates to freeze water flowing thereacross into a slab of ice on each plate and for thereafter heating said plates, means associated with one of said plates for limiting the freezing of water on each spaced plate to a slab of ice thereon of substantially uniform thickness relative to one another, a dissector within said chamber at a side of the uppermost plate adapted to receive a slab of ice therefrom, another dissector separate from and independent of the dissector associated with said uppermost plate spaced therebelow within said chamber at a side of the lowermost plate adapted to receive a slab of ice therefrom, the lower portion of said chamber providing ice block storage means in said cabinet. . . .

2,806,358. VEHICLE REFRIGERATING APPARATUS. James W. Jacobs, Dayton, Ohio, assignor to General Motors Corp., Detroit, Mich.



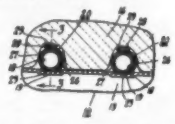
1. In combination, an automobile having a passenger compartment and an engine compartment separated by a wall, an engine within said engine compartment for propelling said vehicle, a refrigerating system disposed wholly within said engine compartment and comprising a compressor, a condenser, an evaporator, and refrigerant flow means for connecting said evaporator, compressor and condenser in refrigerant flow relationship, torque transmitting means between said compressor and said engine, housing means for enclosing said compressor, condenser and evaporator, said housing means having its one end arranged adjacent said wall and connected thereto, said wall having opening means through which air cooled by said evaporator is discharged into said passenger compartment.

2,806,359. REFRIGERATING APPARATUS. David J. Timmer, Dayton, Ohio, assignor to General Motors Corp., Detroit, Mich.



7. In combination, a refrigerator cabinet provided with a food storage chamber therein and having a one piece roll-forged plate member of a refrigerant system associated therewith, said plate member having a plurality of passages formed therein, said member comprising a first portion with the passages therein forming refrigerant expansion duct means to provide an evaporator in said system and a second portion spaced from said first portion and connected thereto by a single web formed integrally with said portions, one of the passages within said second portion of said roll-forged plate member providing a refrigerant condenser in said system, another of the passages within said second portion of said member forming an elongated duct extending through said single web and normally connecting an outlet end of said condenser passage to an inlet of said expansion duct means, a part of said second portion of the roll-forged plate member with a segment of said elongated duct therein at the outlet end of said condenser being cut away to expose an end of said enlongated duct and the outlet end of said condenser passage, a tube separate from said member inserted into the exposed end of said elongated duct and extending therethrough beyond said single web with its one end terminating at a point adjacent the inlet of said evaporator expansion duct means, the other end of said separate tube communicating with the exposed outlet end of said condenser passage. . . .

2,806,360. EVAPORATOR UNIT. Everett C. Armentrout, New Carlisle Ohio, assignor to General Motors Corp., Detroit, Mich.



1. A sheet metal heat absorber of a refrigerating system comprising a substantially box-like member having spaced apart metal clips thereon capable of being deformed by fingers of a person's hand each provided with a portion welded to a wall of said member and over which portion a run of a length of a refrigerant expansion conduit is extended and is to be fastened to the wall by said clips, each of said clips including integral ears projecting outwardly from opposite sides of said welded portion thereof to either side of the run of said conduit and a tab integral with and extending laterally from an end of one of said ears in a direction substantially paralleling the conduit run, one ear of each metal clip together with the tab thereon being rolled in one direction over said conduit run in contact therewith, the other ear of each of said clips being rolled in an opposite direction over said conduit run with a part thereof overlapping a rolled part of said one ear to clamp the conduit run to said wall and to maintain said run spaced from other runs of said conduit, said tab on said one ear of the clips being bent over the overlapping part of said other ear thereof, and the end of said other ear of each metal clip extending beyond said tab and being bent over a side edge thereof to provide an interlock between said ears whereby to prevent unfolding of said overlapped parts of the clips.

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Servicing Automobile Air Conditioners

(Vol. 2)

BY C. DALE MERICLE

The Novi unit is the ninth make to be discussed in the current series on automobile air conditioners. Makes previously described in this series were A.R.A., Artic-Kar, Frigette, Frigikar, Kauffman, Mark IV, Airtemp, and Mobilette. Other makes by "independent" manufacturers will be described in future instalments, following which units of most automobile manufacturers themselves will be described.

Models discussed in the current series are 1956 and/or 1957. For data on earlier models readers are referred to the original series of articles, which is available now in the handy manual, *Servicing Automobile Air Conditioners.*

NOVI (1)

Novi Sales & Service Co., Inc.
Novi, Mich.

In 1956 Novi introduced an under-dash type air conditioner for general application. Previously only a trunk model was available except for an under-dash model designed for 1955 Ford and Mercury cars. Both trunk and dash models were produced by Novi in 1956 and 1957. The trunk system is designated as the "deluxe" model.

Use of a modulating by-pass valve to control refrigerating effect was continued by Novi on its 1956 and 1957 models. A magnetic clutch is offered as an optional accessory and thus will be found on some Novi units. The clutch is employed, however, only to turn the system on and off. The clutch is not cycled to control cooling effect.

Refrigerant-12 is employed in both dash and trunk units in the Novi 1956 and 1957 models. Exact charge for each unit is specified on the evaporator assembly nameplate.

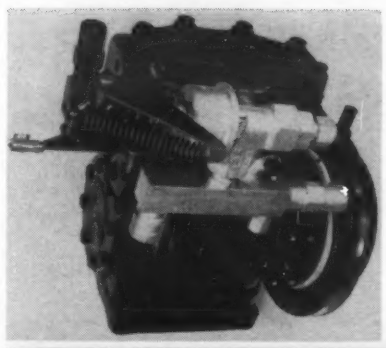

FIG. 1—Modulating by-pass valve employed by Novi to control temperature is mounted on the compressor.

FIG. 2 shows Novi trunk unit as installed.

FIG. 3—Top view shows air discharge nozzles and return air intakes in package shelf.

Compressor

Two types of compressors are used by Novi. Some units are fitted with the Tecumseh HH compressor, while others employ the Lehigh V-93 model.

Suction service valve of the Tecumseh HH compressor is usually located on the left side (as viewed from flywheel end). Discharge service valve will usually be found on right side when compressor is mounted vertically, or on back when machine is mounted horizontally.

Suction service valve of the Lehigh V-93 is on top of the compressor between the cylinder heads. Discharge service valve is on rear.

Modulating by-pass valve employed on Novi air conditioners is mounted on the compressor, being connected directly to the suction service valve. (See Fig. 1.)

Condenser

Condenser is installed in front of the car radiator. Both double and single-row condensers have been used on Novi systems.

All Novi condensers have three fittings. Upper and largest fitting is the inlet and is connected to the discharge valve of the compressor. Lower fitting is the condenser outlet and is connected to the receiver. Center fitting is the by-pass outlet and is connected to the inlet of the modulating valve on the compressor.

Style and location of the receiver has varied on Novi units. On 1956 trunk models, the combination receiver-drier unit plus a separate sight glass is located near the evaporator. The 1956 style receiver is black, has an outside diameter of 3 in. and is 8½ in. long from mounting base to top.

The 1956 dash units have a combination receiver-drier with a sight glass attached to the lower fitting. It is located on or near the condenser. This receiver is black, 10⅜ in. long, and 2½ in o.d.

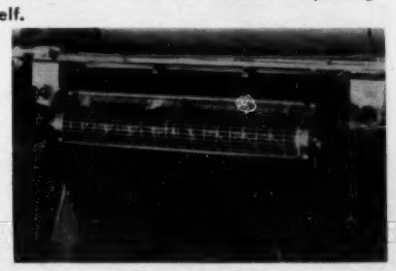

FIG. 4—Novi's under-dash conditioner. Note blower control at left. At right is by-pass valve control and clutch on-off toggle switch.

All 1957 Novi conditioners employ a combination receiver-drier-sight glass located near the condenser. This receiver is black, 13 in. long, and 3 in. o.d.

Evaporator

Evaporator assembly of both trunk and dash units houses the cooling coil, thermostatic expansion valve, and blower(s).

Two centrifugal blowers are employed on trunk units, being located on each end of the cooling case assembly (Fig. 2). These discharge cooled air into the car through flexible ducts extending up through the parcel shelf to plastic nozzles. Return air is brought to the unit through two intake grilles located in center of parcel shelf. (See Fig. 3.)

Blower motors on Novi trunk units are of two-speed design.

A single propeller-type fan is used on the under-dash unit (Fig. 4). This is a four-blade fan driven by a three-speed motor.

Fan motors in both the 1956-57 trunk and dash units have an external ground wire connection.

Various type expansion valves have been employed on Novi conditioners. Some are internally equalized, other are externally equalized. Some valves have a fixed superheat setting, while others have an adjustable superheat setting.

Novi advises, however, that "all valves are set at the factory for best all-around operation and should not be changed."

(To Be Continued)

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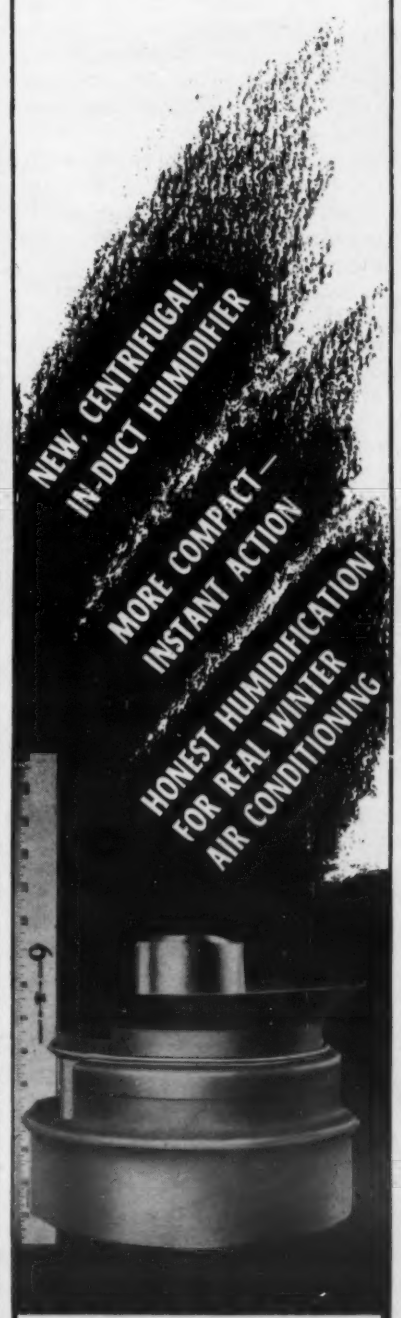

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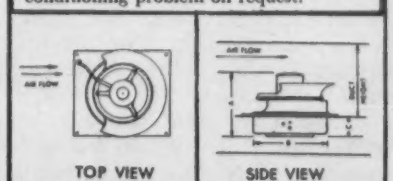

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R. D. KEMPER

D. C. SEITZ

McQuay Appoints Seitz In Refrigeration Sales, Kemper Coil Sales Chief

MINNEAPOLIS — Dean C. Seitz has been appointed refrigeration sales manager of McQuay, Inc., Minneapolis manufacturer of heating, air conditioning, and commercial refrigeration equipment, according to G. G. Workinger, general sales manager.

Workinger also announced the appointment of R. D. Kemper as sales manager of McQuay's coil department.

Seitz's entire business career has been spent in the refrigeration and air conditioning sales field. During the past 18 years, he was with York Corp. where he held various sales management positions from district manager to general commercial sales manager.

Seitz will concentrate his activities on the building of a strong jobbing and distributing organization for McQuay refrigeration products throughout the United States, it was pointed out.

Prior to joining McQuay, Kemper was engineering manager of room air conditioners for York Div. of Borg-Warner Corp. Excepting for time spent in the U. S. Navy during World War II and the Korean emergency, where he attained the rank of commander, Kemper was with York for 16 years. He also served in the Bureau of Ships, Washington, D. C. as foreign aid assistanst, it was added.

While with York, Kemper served in various capacities in the engineering, design, and development of air conditioning and refrigeration equipment.

York Buys--

(Concluded from Page 1, Col. 4)

is one of the lightest, most compact, and reliable high-speed units of its type," the announcement said. "It is being installed in the 1958 models of several leading automobile manufacturers of automotive air conditioning systems."

As part of its long-range product development and manufacturing program, Lehigh Mfg. Co., Div. of Lehigh, Inc., is moving its condensing unit and compressor manufacturing facilities from Lancaster to the company's Easton, Pa. plant, it was announced by Leroy M. Bissett, general manager.

Transfer of equipment will begin about Nov. 1 and be completed by Dec. 15. No interruption of service will be involved in the changeover, it was pointed out.

"Integrating our manufacturing activities with those of our parent company, Lehigh, Inc., will provide greatly-expanded facilities and centralized engineering and research for new product development," Bissett said.

787 Supermarkets Open In First 9 Mos. Study Shows; 101 Opened In September

NEW YORK CITY—For the first nine months of 1957, the number of new supermarkets opened were 12.3% fewer than in the same period last year, according to a study made by the research department of *Supermarket News*.

Openings numbered 787 this year as compared with 897 in 1956.

The trade paper's figures showed that more supermarkets were opened in September (101) than in any previous month this year. The openings represented a 46.4% gain over September, 1956. However, the September, 1956 figure (69) was the lowest of any month in the first three quarters of that year, the study indicated.

Average sales area in the markets opened in the first nine months of this year was 11,000 sq. ft. as compared with 10,500 sq. ft. for the markets opened in the same period last year, it was added.

Average total area was 15,800 sq. ft. as compared with 14,600 sq. ft. last year.

Sees 10,000 Markets Being Built by '77

BOSTON—About 10,000 new supermarkets will be built in the next 10 years, William Applebaum, visiting consultant on food distribution at the Harvard Business School, told delegates to the Boston Conference on Distribution here recently.

He saw about half of them rising in new living areas outside cities and the other half in older, more densely populated areas.

He said recent studies forecast an increase in supermarket sales from $25 billion annually now to $40 billion in 1967.

Develops Magnetic Clutch for Auto Conditioner Compressor

NOVI, Mich. — The Novi Equipment Co. has developed its own magnetic clutch for air conditioning compressors to be used in conjunction with automotive air conditioners. The clutch will be made available to other air conditioning manufacturers, the company further stated.

A new truck-cab air conditioner will soon be marketed by Novi Sales & Service Co., Inc., a subsidiary of Novi Equipment Co., the manufacturer indicated.

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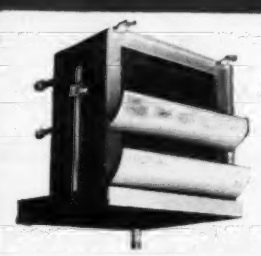

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Condensers
When you sell McQuay refrigeration products, you sell a line that is complete, and a line that brings you year 'round profit. You also sell a line that is completely engineered and backed by the know-how that has made McQuay famous. McQuay is the name and the quality to look for.

EVAPORATIVE CONDENSERS Centrifugal Fan Type 3 sizes—3-1/2, 6 and 12 tons

REMOTE AIR COOLED CONDENSERS—Centrifugal Fan Type 4 sizes—2, 3, 5 and 7-1/2 tons

REMOTE AIR COOLED CONDENSERS—Propeller Fan Type 11 sizes—2 to 50 tons

Air Conditioners and Evaporators

HORIZONTAL EVAPORATORS 4 sizes—2, 3, 5 and 7-1/2 tons. 27,500 to 92,100 BTU/Hr.; 800 to 3000 CFM

CEILING MOUNTED AIR CONDITIONERS—Unlimited number of sizes and types, 200 to 3000 CFM; 6250 to 127,400 BTU/Hr.

VERTICAL EVAPORATORS 4 sizes—2, 3, 5 and 7-1/2 tons. 27,200 to 90,000 BTU/Hr.; 800 to 2600 CFM

FLOOR MOUNTED SEASONMAKERS 4 models from 200 to 500 CFM, 6250 to 21,800 BTU/Hr.

McQuay Means Quality
AIR CONDITIONING • HEATING • REFRIGERATION
McQuay INC.

For more information about products advertised on this page use Information Center, page 22.